

# Second Cancer Following Cancer of the Female Genital System in Connecticut, 1935–82<sup>1</sup>

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**ABSTRACT**—The risk of second primary cancer was evaluated in more than 25,000 women with cancer of the genital organs diagnosed between 1935 and 1982 in Connecticut. Significant excesses of subsequent cancers were observed following cancers of the cervix (35%,  $n = 656$ ), uterine corpus (16%,  $n = 1,060$ ), and ovary (58%,  $n = 366$ ). When observed and expected second cancers of the female genital tract were excluded, these excesses became 40%, 30%, and 59% after cervix, uterine corpus, and ovary, respectively. Among women with either cancer of the cervix or uterine corpus, the risk of developing a second cancer rose with increasing duration of follow-up, reaching an excess of 61 and 34%, respectively, after 20 years. In contrast, among patients with ovarian cancer, the second cancer risk decreased over time to 41% after 10 years. Cancers related to smoking, i.e., oral cavity and pharynx, esophagus, and respiratory system, were notably increased among cervical cancer patients. The twofold to threefold risks observed for these second cancers are consistent with recent evidence linking cervical cancer to cigarette smoking and seem too large to be artifacts of confounding by low socioeconomic status. An increased incidence of second cancer of the abdominal organs (colon, rectum, kidney, bladder, ovaries) was generally observed for each gynecologic site. However, only rectal cancer was consistently linked with radiation treatment for the first primary cancer. Leukemia occurred in excess after cancers of the uterine corpus and ovary, but not after cervical cancer. The predominant cell type was acute nonlymphocytic leukemia, and the excess was associated with radiotherapy for uterine corpus cancer and with chemotherapy for ovarian cancer. Cancers of the breast and colon were increased following uterine corpus and ovarian cancer and vice versa, which supports the notion that these sites share a common etiology, perhaps related to dietary or hormonal factors. Cervical cancer patients experienced a deficit of subsequent breast cancer, possibly due to ovarian removal or ablation by radiation. Investigators need to explore further the association between the smoking-related cancer sites and cervical cancer, to clarify the role of radiotherapy and chemotherapy in relation to excess

cancers, and to define more fully the etiologic factors that link cancers of the breast, colon, uterine corpus, and ovary.—*Natl Cancer Inst Monogr* 68: 113–137, 1985.

## CERVIX (ICD-O, 180)

The incidence and mortality of invasive cervical cancer have been declining steadily at about 4% per year for all age groups from the 1940s through the 1970s in the United States (1). This decline has been attributed to the widespread use of the Papanicolaou smear, the increasing rate with which hysterectomies are being performed, and the general increase in the standard of living (2). Invasive cervical cancer accounted for 4% of all cancers diagnosed in females 1973–79 (3). Previously identified risk factors include early age at first coitus and first marriage, multiple sexual partners, and low socioeconomic status (2). The role of herpes virus type 2 and papillomavirus is under investigation, and cigarette smoking has also been implicated as a possible risk factor (2, 4). The 5-year relative survival rate for cervical cancer has improved over time from 58% in 1960–63 to 64% in 1970–73 (5). For localized disease, the 5-year survival rate was 82% in 1964–73.

Previous studies of second cancers following invasive cervical cancer have reported increased risks for cancers of the bladder, rectum, kidney, ovary, and uterine corpus in patients receiving radiotherapy (6–9). These risks were most noticeable among those followed for 15 or more years after treatment. Rates for lung cancer were also elevated, but not among long-term survivors. Surprisingly, large excesses of radiogenic leukemia, expected because of the high radiation dose to the bone marrow, have not been observed (6, 8–11). However, a small leukemia risk was recently reported from a large international survey (7).

## Results

Between 1935 and 1982 in Connecticut, 8,086 women were diagnosed with a first primary invasive cancer of the uterine cervix and survived for at least 2 months. Almost 94% of these tumors were histologically confirmed. The average age at diagnosis was 52 years, and the average year of diagnosis was 1958. The women were followed for a total of 66,267 person-years after diagnosis, for an average follow-up of 8.2 years; 89% of the patients were either in active follow-up at the beginning of 1981 or were known to have died. Most cervical cancer patients in Connecticut received some form of radiotherapy as their initial treatment: Seventy percent of the women were

ABBREVIATIONS: ICD-O = International Classification of Diseases for Oncology; RR = relative risk(s); CI = confidence interval; NOS = not otherwise specified; ANLL = acute nonlymphocytic leukemia.

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treated with radiation only, 10% with radiation and surgery, 16% with surgery only, and 4% with other treatments, including hormones and chemotherapy.

During the follow-up, 656 women were diagnosed with a second primary cancer compared with 485 expected based on rates prevailing in the general population ( $RR = 1.35$ ; 95%  $CI = 1.25-1.46$ ). The exclusion of the observed and expected second cervical cancers from the analysis increased the overall  $RR$  only marginally to 1.40; further exclusion of cancers of the uterine corpus, ovary, and other reproductive organs did not change this risk estimate. The  $RR$  of second primary cancer increased steadily and consistently with increasing duration of follow-up, rising from 0.9 within the first year of diagnosis to 1.6 among 20-year survivors. Among patients surviving 30 or more years, the  $RR$  reached 2.0.

The overall 35% excess of second primary tumors derived primarily from statistically significant  $RR$  of approximately twofold or greater for cancers of the oral cavity and pharynx (2.4), rectum (1.9), respiratory tract (3.5), kidney (2.0), and bladder (3.3). Nonsignificant elevations of similar magnitude were seen for cancers of the esophagus ( $RR = 2.3$ ), connective tissue ( $RR = 2.3$ ), and bone ( $RR = 2.7$ ). A significant deficit ( $RR = 0.8$ ) of breast cancer was also observed.

The risks for second cancers of the oral cavity, esophagus, stomach, and respiratory tract were elevated in practically all periods after cervical cancer diagnosis, and the  $RR$  did not increase over time. The frequency of subsequent rectal cancer was not initially increased over expectation, but the  $RR$  rose with increasing duration of follow-up. In contrast, the risk for second cancers of the kidney and bladder showed substantial elevations within the first 5 years, especially for bladder cancer, with even greater risks seen among long-term survivors (about sixfold for both sites in 30-year survivors). Also noteworthy was the unusually high  $RR$  of ovarian cancer among 30-year survivors (7.9,  $n = 6$ ).

The data were also analyzed according to whether the patients received radiation therapy as part of their first course of treatment for cervical cancer. Because 80% of the women received radiation treatments, the opportunity to make meaningful comparisons with the small number of nonexposed women was restricted. However, risks of twofold to fourfold for cancers of the oral cavity, pharynx, and respiratory tract were seen in irradiated and nonirradiated patients. Two bone cancers occurred at 41 and 120 months following irradiation for cervical cancer, and both were located within the radiation field. The elevated  $RR$  for rectal cancer, particularly in long-term survivors, was limited to the irradiated patients. Second cancers of the kidney occurred at essentially normal levels in irradiated patients throughout the 1- to 19-year follow-up period, but then increased dramatically to approximately a sevenfold risk for 20-year survivors. In contrast, bladder cancer was elevated in every decade of follow-up, although the risks increased substantially 10 years post-treatment. Although 3.4 cancers were expected, no second primary tumors of the kidney and bladder were observed among the women who did not receive radiation treatment. All the excess risk of ovarian cancer in long-term

survivors was concentrated among 30-year survivors who had received radiation treatment ( $RR = 7.9$ ,  $n = 5$ ). The  $RR$  for leukemia among the irradiated women was 1.2, and among 10-year survivors the observed number equaled that expected. The slight overall leukemia excess was derived from a twofold risk based on 4 observed cases occurring 5 to 9 years after treatment. The overall deficit of breast cancer was limited to the irradiated women ( $RR = 0.7$ ). A small but nonsignificant excess of breast cancer occurred among those not irradiated ( $RR = 1.3$ ). The deficit of breast cancer among the irradiated patients was apparent within the first year after the initial cervical cancer was diagnosed and remained reasonably consistent throughout the follow-up period.

## Discussion

Patients with cervical cancer had an excess risk for second cancers of the oral cavity, pharynx, and respiratory system (including the nasal cavities, larynx, and lung). The magnitude of these risks was twofold to threefold and tended to be relatively constant over 30 years of follow-up among both the irradiated and nonirradiated women. Therefore, it is likely that these tumors share a common etiology with cervical cancer, rather than being related to treatment for the first primary. This would be consistent with the accumulating evidence linking cervical cancer to cigarette smoking because all these cancer sites are related to smoking habits. The link between smoking and cervical cancer was first suggested on the basis of concomitant geographic variation (12) and was recently supported by case-control studies (13, 14). The fact that women with cervical cancer are at high risk of developing cancers related to smoking adds further credibility to this hypothesis. Although the relationship could be simply an artifact due to an inverse association of all these cancers with socioeconomic indicators, this seems unlikely for two reasons. The twofold to threefold risks noted are greater than reported comparisons among the extremes of the socioeconomic gradient for the smoking-related sites (15). In addition, next to cervical cancer, the site with the strongest inverse relationship with social class is stomach cancer, and it is only marginally elevated ( $RR = 1.4$ ) among patients with cervical cancer.

The excess risks for cancers of the rectum and bone appeared to follow a pattern consistent with radiation-induced second cancers. Both sites have been associated with ionizing radiation in other studies (16), and the excesses were generally restricted to irradiated women and to the later follow-up intervals. In addition, the high risk of ovarian cancer that appeared 30 years after treatment was confined to the irradiated patients, although ovarian cancer has not been consistently related to radiation (16). Nevertheless, these data are provocative when one considers that many women with cervical cancer have their ovaries surgically removed, so that the expected numbers of ovarian cancers should be considerably less than those based on the rates in the general population. The lack of any large excess risk of leukemia noted here is consistent with other cohort studies of cervical cancer patients (10). It has been speculated that the high doses of radiation to

relatively small volumes of bone marrow may result in cell-killing rather than transformation. However, a slight elevation in leukemia risk was derived from the period when one might expect to see radiation-induced leukemias (5–9 yr following treatment). This could perhaps reflect the influence of lower doses of radiation absorbed by marrow outside the pelvis.

The elevated risks for bladder cancer and (to a lesser extent) kidney cancer were seen during the early and later stages of follow-up. Inasmuch as these women are closely monitored for cancer spread to the pelvic organs, the early excesses may be due to increased medical surveillance. The increased risks were seen only among the irradiated women, although small expected values among women not receiving radiation preclude any definite statement. The bladder probably received intense radiation exposure due to its location close to the cervix, whereas the kidneys, at an intermediate distance from the cervix, would have received lower doses (7). Both sites are apparently susceptible to radiogenic cancer, although previous studies have suggested that the level of excess risk is probably small (16). Kidney and bladder cancers have been associated with increased cigarette consumption (17), but the strength of the association to smoking is not of the magnitude to account for the threefold to fourfold RR developing after 10 years of follow-up. These data suggest that a combination of factors is responsible for the excess risk of urinary tract cancer, such as tobacco smoking, medical surveillance, radiation treatment, and possibly other factors.

The overall deficit of breast cancer among patients with cervical cancer was anticipated because the risk factors for one cancer tend to be protective for the other (2). The consistently reduced risk throughout the follow-up period would agree with this supposition, but the protective effect was confined to patients who had received radiation treatment. This may reflect the greater reduction in breast cancer risk associated with radiation castration compared with surgical castration noted in other studies (7), although the protective effects are present before the time that castration effects are usually noted (18), i.e., within the first 10 years of follow-up.

#### UTERINE CORPUS, UTERUS, NOT OTHERWISE SPECIFIED (ICD-O, 179, 182)

Cancer of the uterine corpus, including uterus, NOS, i.e., diagnoses not specified as to whether they originated in the cervix or corpus, is the third most common cancer in women, representing 9% of all newly diagnosed cancers (3). The incidence of uterine cancer remained constant until the early 1970s, when a sharp increase was observed, attributed mainly to the increasing use of menopausal estrogens (1, 19). Following public awareness of this problem and the consequent reduction in use of estrogens for menopausal symptoms, the incidence of uterine cancer began to decrease in the late 1970s (1). Major risk factors for uterine cancer relate to prolonged unopposed estrogen stimulation, obesity, late age at menopause, and nulliparity (2, 20). Less consistent associations have also been reported with diabetes, hypertension, prior pelvic radiation, and high socioeconomic status (2, 21, 22). Mortality

rates have been declining over the years 1950–80, reflecting a combination of improved survival rates and earlier diagnoses. The 5-year relative survival rate for whites increased from 73% in 1960–63 to 81% in 1970–73 (5). Among white females, 78% of all cancers were localized to the corpus and survival was excellent: 90% at 5 years.

Previous surveys of uterine cancer have consistently revealed a 30 to 40% increased risk of subsequent breast cancer, the association being strongest for obese, nulliparous women, and a 40 to 90% excess risk for colorectal cancer (6, 8, 23–26). Less consistently, elevated risks have been noted for second leukemia (27), lymphoma (24), and cancers of the kidney (8), bladder (24), lung (24, 26), and thyroid (25). In addition, a significant deficit of stomach cancer has been reported (8).

#### Results

A total of 11,652 women survived 2 or more months after being diagnosed in Connecticut (1935–82) with cancers of the uterine corpus or uterus, NOS. The average age at diagnosis was 60 years, and the average year of diagnosis was 1964. These women were followed for a total of 95,367 person-years for an average of 8.2 years/patient. At the beginning of 1981, only 10% of the patients had been lost to follow-up. Women were generally treated with surgery alone (37%), surgery and radiation (40%), or radiotherapy alone (18%).

A total of 1,060 women developed a second primary cancer compared with 915 expected on the basis of incidence rates prevailing in the general population (RR = 1.16; 95% CI = 1.09–1.23). The treatment for uterine cancer often involves the resection of the entire female genital tract. Removing cancers of female reproductive organs from the risk analysis gives an overall RR of 1.30 (95% CI = 1.22–1.38). Most of the excess was due to statistically significant RR for cancers of the colon (1.4), rectum (1.6), lung (1.4), breast (1.3), kidney (2.1), bladder (1.7), and thyroid (2.0), and for leukemia (1.6). Also noteworthy were 60% nonsignificant excesses of multiple myeloma and cancers of the bone and connective tissue. Except for tumors of the female reproductive tract, no significant deficiencies of any cancer site were noted.

With second cancers of the genital tract removed from the total, fairly consistent excess risks of 23 to 35% were seen for the first 20 years after diagnosis of uterine cancer, beginning after the first year of follow-up. For those surviving 20 and more years, the risk increased to 50%. Of the individual sites increased above expectation, the RR for cancers of the colon and breast did not appear to follow any discernible pattern over time. Elevated risks for cancers of the lung and thyroid were limited to the first 20 years of follow-up; the lung cancer risk remained fairly constant at the 50–65% level over 20 years of follow-up after the first year, whereas the thyroid cancer excess was concentrated in the interval 10 to 19 years after diagnosis. The overall excess of leukemia was derived primarily from a twofold RR within the first 10 years of follow-up. Second primary cancers of the rectum, kidney, and bladder were all excessive within the first 5 years of follow-up and thereafter showed a general pattern of

increasing RR over time. The risks among 20-year survivors were approximately twofold for cancer of the rectum and threefold to fourfold for cancers of the kidney and bladder. Increases for cancers of the bone and connective tissue were generally restricted to 10-year survivors. The observed number of ovarian cancers resembled that expected (35 vs. 41), which is notable given the frequency with which ovaries are removed during the treatment for cancer of the corpus uteri. This lack of anticipated "protection" against ovarian cancer was most pronounced within the first year following treatment ( $RR = 6.4$ ,  $n = 22$ ).

The RR of second primary tumors of the colon, breast, thyroid, kidney, bladder, and connective tissue were similar for those women whose initial treatment of uterine cancer included radiation and those who did not receive such treatment. The excess risks for multiple myeloma, rectal cancer, and bone cancer were concentrated in women who received radiation therapy and who survived 5 or more years. Cancers of the lung were seen more frequently in irradiated women; however, the excess appeared 1 year after the uterine corpus cancer diagnosis. Two bone cancers (both chondrosarcomas) occurred 10 or more years after radiation exposure; 1 developed in the pelvic region and the other in the long bones of the lower limb. Among irradiated women, the leukemia risk rose to twofold within 5 years of radiation therapy, remained at approximately this level for over 20 years, and was almost entirely due to ANLL. Patients not receiving radiation therapy experienced a subsequent leukemia risk similar to that of the general population, although their risk of chronic lymphocytic leukemia was unexplainably high.

The risk of second cancer among 905 women with a sarcoma of the uterine corpus was similar to that observed for all histologic types combined. Second cancers developed in 47 women at sites other than the female genital tract in comparison to 36.2 expected ( $RR = 1.30$ ; 95% CI = 0.96–1.72; not shown in the table). Nonsignificant increased RR were found for second cancers of the rectum (2.6,  $n = 6$ ), lung (2.2,  $n = 6$ ), breast (1.2,  $n = 15$ ), and thyroid (5.5,  $n = 2$ ).

## Discussion

For some time, it has been suspected that cancers of the uterine corpus, breast, and colon might share at least some common etiologic factors. The lines of human evidence are fourfold. The tumors vary concomitantly on a geographic basis (28), and migrant populations adopt (at varying rates) the risk of the nation to which they migrate (29). The tumors also appear to occur excessively over multiple generations among certain high-risk families (30). In addition, they tend to occur as complexes of multiple primary cancers (8, 24–26). This clustering was also confirmed by our study: Breast and colon cancers occurred excessively following cancer of the uterine corpus, and cancer of the uterine corpus occurred excessively following cancers of the colon and breast (31, 32). In addition, the excess risks appeared unrelated to radiation therapy and remained at approximately the same level in short- and long-term survivors. To date, the specific risk

factors underlying this constellation of multiple cancers are uncertain, although dietary, hormonal, and genetic susceptibility factors are suspected (2, 22, 33). In addition, the current data suggest that cancers of the kidney, bladder, and thyroid also occur excessively after uterine corpus cancer. Similar associations have been reported by other investigators (8, 24, 25), who proposed the possibility of shared risk factors. The excesses were seen in irradiated and nonirradiated women and appeared within 5 years of the uterine corpus diagnosis. An alternative explanation for the increased risk of second cancers of the pelvic organs may be that the cancers are occult tumors discovered during the routine medical surveillance of these patients to detect spread of the initial cancer to contiguous or neighboring organs.

The excesses of leukemia, multiple myeloma, and cancers of the bone and rectum showed patterns that appeared consistent with a radiation etiology. These cancers have previously been associated with radiation (16), the excesses occurred primarily among women who were irradiated, and the bone marrow, pelvic bone, and rectum received substantial doses of radiation during the course of treatment for the uterine corpus cancer. The patterns of risk by time following radiation exposure were also consistent with other surveys of radiation-induced cancer at these sites (16).

The excess of ovarian cancer within a year following diagnosis of uterine corpus cancer and the excess risk of lung cancer over the first 20 years were unexpected. It could be that these increased risks are merely artifacts reflecting direct spread (ovary) and distant metastasis (lung) of cancers of the uterine corpus that were misdiagnosed as new primaries. However, because almost 80% of these patients have localized disease at diagnosis, it is unlikely that many of these patients would develop metastases to the lung. The ovarian excess could reflect the presence of estrogen-secreting tumors of the ovary, including theca cell and granulosa cell tumors, which might actually be responsible for the development of the cancers of the uterine corpus (34).

## OVARY, FALLOPIAN TUBES, BROAD LIGAMENTS (ICD-O, 183)

Ovarian cancer is the fourth most frequent cause of cancer death among women in the United States and the leading cause of death from cancer of the female genital tract (35). On the basis of 1973–77 incidence rates from the Surveillance, Epidemiology, and End Results Program, about 1 of every 77 women will develop this cancer in their lifetime (2). Incidence and mortality rates for ovarian cancer have not changed substantially over the past four decades (1). Five-year relative survival rates have remained low over the past 20 years: 32% in 1960–63, 36% in 1970–73, and 37% in 1973–80 (3). This poor prognosis is related to the fact that most (70%) women have advanced disease at the time of diagnosis (35).

The only risk factor for ovarian cancer that has been reported consistently is never having been pregnant (2). Negative associations have been reported with increasing number of pregnancies and positive associations with

increasing years of ovulation and family history of ovarian cancer (2, 36). Several studies have demonstrated an excess risk of leukemia following treatment of ovarian cancer with alkylating agents (37-39). Elevated risks of second cancers of the colon and bladder have also been linked to radiotherapy for ovarian cancer (40). Previous research has shown an increased risk for second cancers of the breast (8, 25, 40, 41) and uterine corpus (8, 25, 40). Excesses of cancers of the thyroid and lung have also been reported, although these were based on small numbers (8, 25).

## Results

Over the years 1935-82 in Connecticut, 6,810 women survived 2 or more months after being diagnosed with a first primary cancer of the ovary. Their average age at diagnosis was 56 years, and the average year at diagnosis was 1963. These women were followed for a total of 31,200 person-years, for an average of 4.6 years per woman; 95% were either in active follow-up at the beginning of 1981 or had died. The first course of treatment for the ovarian cancer consisted of surgery only (33%), surgery and radiotherapy alone (36%), surgery and chemotherapy or chemotherapy alone (17%), radiotherapy and chemotherapy in combination (5%), or hormonal treatment only or no known treatment (9%).

Second primary cancers were reported in 366 women compared with approximately 232 that would have been expected based on the rates in the general population ( $RR = 1.58$ ; 95%  $CI = 1.42-1.75$ ). The overall  $RR$  estimate did not change when the 61 observed and 40 expected cases of cancers of the female genital tract were removed from the analysis. Most of the excess was accounted for by significantly increased  $RR$  for subsequent ANLL (5.4), and cancers of the colon (2.0), rectum (1.6), breast (1.4), uterine corpus (1.6), kidney (2.8), bladder (2.8) and connective tissue (5.0), plus nonsignificant elevations for cancers of the lung (1.6) and ovary (1.6).

The risk of second cancers was significantly elevated in all follow-up intervals, was highest within the first year after diagnosis of ovarian cancer ( $RR = 1.9$ ), and progressively declined to 1.4 after 10 years. The excess risk within the first year of diagnosis was mainly attributable to excess cancers of the colon, lung, corpus uteri, rectum, and kidney. Because each of these sites represents a possible site of metastatic spread of ovarian cancer, or a site from which a cancer could spread to the ovary, the risks were reevaluated after elimination of the first year's data. Even after this procedure, substantial excess risks remained for each of these sites. The  $RR$  were 1.4, 1.5, 1.6, 1.7, and 2.5 for cancers of the corpus uteri, lung, rectum, colon, and kidney, respectively. With the exception of the first year of follow-up, the risks for cancers of the colon, rectum, and lung appeared to rise progressively with increasing follow-up, reaching risks of twofold or greater for each site among 10-year survivors. In contrast, the risks for breast cancer and cancer of the uterine corpus were highest during the first 5 years of follow-up and then dropped to essentially normal levels among 10-year survivors. Although based on small numbers, the overall

excess of connective tissue cancer appeared to come mainly from 5 year survivors. Elevated risks for kidney and bladder cancer were inconsistent, being highest in the first 5 years of follow-up, then declining, and then rising again among 10-year survivors. Much of the kidney excess during the first 5 years after diagnosis was accounted for by 4 of 6 cancers discovered at autopsy. This pattern of excess second kidney cancers due to incidental autopsy findings was not found following initial cancers of the cervix and uterine corpus. The excess risk of leukemia and multiple myeloma was restricted to the time between 1 and 9 years after diagnosis of ovarian cancer, with 10-year survivors showing no excess. In addition, the fourfold to fivefold excess risk of leukemia seen within the first 10 years of follow-up could be attributed entirely to an approximately tenfold risk for ANLL.

The cancer sites showing excess risks were examined according to whether the patients received radiation as part of their initial course of treatment for ovarian cancer. Whereas risks were in excess for cancers of the colon, rectum, and lung among 10-year survivors who had not received radiotherapy, the  $RR$  were larger, and the trends with follow-up more pronounced for those who received radiation therapy, rising to twofold to threefold for each of these sites. The increased risks for thyroid cancer and connective tissue cancers among long-term survivors seemed restricted to those who had undergone radiation therapy. Two of the 3 sarcomas developing in irradiated women were located at sites within the radiation field, but the location of the third tumor was not specified in the tumor registry record. All 3 tumors occurred after approximately 20 years of follow-up.

Elevations of kidney cancer were similar in both irradiated and nonirradiated groups. Although the overall risk of bladder cancer was elevated in patients not treated with radiotherapy, a sevenfold excess (based on 6 cases) was seen among 10-year survivors who had received radiation therapy compared with a twofold risk for those who had not. Overall, an 80% excess risk of breast cancer was observed among the irradiated group that persisted 20 years following treatment for ovarian cancer. The breast cancer risk was more moderate in those who had not received radiation treatment and persisted only 5 years postdiagnosis of ovarian cancer before declining to the expected levels. Elevations of multiple myeloma and ANLL were present in both treatment groups, although higher  $RR$  were noted for those treated with radiation.

Based on indications from the literature, the risk of ANLL was evaluated according to whether the initial treatment for ovarian cancer included chemotherapy or not. Most of the excess risk could be explained by such treatment ( $RR = 43$ ,  $n = 7$ ). Two of the 7 patients received radiotherapy in addition to chemotherapy.

## Discussion

Previous studies of multiple primary cancers have indicated associations between cancers of the ovary, breast, and uterine corpus (8, 25, 40, 41). This array of tumors also appeared in our series. Subsequent cancers of the uterine corpus and breast occurred 40 to 60% more

frequently than expected among women with ovarian cancer. The excess risk of cancer of the uterine corpus is remarkable, given the fact that therapy for ovarian cancer frequently involves removal of the uterus. Because one would anticipate a deficiency of these neoplasms in ovarian cancer patients, the presence of a 60% excess risk suggests a strong association. However, it is noteworthy that in each case the interval between the diagnosis of the first ovarian and second uterine corpus primaries was less than 5 years, which raises the possibility that the elevation is due to misdiagnosed metastases. The increased risk for cancer of the breast tended to decline over time and approached normal levels among 10-year survivors. This pattern is consistent with the protective effects of ovarian ablation on cancers of the breast. Previous studies have indicated that it takes approximately 10 years for the protective effect of oophorectomy on breast cancer risk to become apparent (18). The association of these 3 types of cancers within the same patients is also consistent with their concomitant geographic variation (28) and lends credibility to the speculation that they share etiologic factors, perhaps dietary or hormonal in nature (2, 36).

After excluding the first year of follow-up, second cancers of the colon, rectum, lung, and connective tissue showed patterns of increasing risks with increasing time since the initial diagnosis of ovarian cancer and higher risks in irradiated versus nonirradiated patients. This suggests a radiation etiology. The high organ doses received and the associations reported in other epidemiologic studies support this interpretation for the cancers of the rectum and connective tissue (7, 16). Although patients with cancer of the colon have received substantial radiation doses, the colon has not been consistently identified as a radiosensitive organ in other studies (7); however, an apparent radiation effect was suggested among patients irradiated for ankylosing spondylitis (42). Lung cancer also has occurred excessively in several irradiated populations (43), but the excess in our study seemed high for the doses of radiation that the lung was likely to have absorbed. Radiation may have played a role in the sevenfold excess of second bladder cancer observed after 10 years of follow-up in irradiated women, although smaller increases were also seen in women not reported to be exposed to radiation. One difficulty in assessing the role of radiation-induced cancers in women with ovarian cancer is the fact that 70% of these patients were diagnosed with advanced disease, and, therefore, many of the women who did not receive radiation therapy for their initial treatment may have received such exposure in subsequent courses of treatment (44). Inasmuch as the only treatment information reported to the Registry is initial therapy, the radiation exposure of many patients may be misclassified.

Although the RR for second cancers of the pelvic organs were generally higher in patients exposed to radiation compared with women not receiving this therapy, some of the excess risks appear unrelated to treatment. The association of ovarian and colon cancer was reciprocal, i.e., ovarian cancer was also increased following colon cancer, which may suggest the presence of common etiologic factors. Moreover, pelvic area cancers

may be diagnosed more frequently in patients with ovarian cancer due to the intensive medical screening these women receive so that physicians can detect spread of the initial cancer to contiguous sites. In addition, a portion of this excess may be accounted for by difficulty in distinguishing metastases from independent primaries.

Recent insights into the leukemogenic effects of several alkylating agents have come from analytic studies of the leukemia risks among ovarian cancer patients treated with these drugs (37-39). In line with this evidence, our study revealed a definite excess of ANLL within the first 10 years following treatment, primarily among those who received chemotherapy as part of their first course. This indicates the need for continued monitoring of these patients for risks of other tumors.

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**CERVIX  
FEMALES**

TABLE 1A.—*Characteristics of persons reported to the Connecticut Tumor Registry with an initial cancer of the cervix uteri, 1935-82<sup>a</sup>*

Category	Male	Female	Total
No. with first primary cancer <sup>b</sup>	0	8,086	8,086
No. who developed a second primary cancer	0	656	656
Average age at diagnosis of first cancer, yr	0	52	52
Average yr of diagnosis of first cancer	0	1958	1958
Person-yr of follow-up	0	66,267	66,267
Average follow-up, yr	0.0	8.2	8.2
Percent given radiotherapy for first cancer	0.0	80.5	80.5

<sup>a</sup> ICD-O code = 180.

<sup>b</sup> Number excludes all persons who survived less than 2 mo after the diagnosis of their first primary cancer or who developed a simultaneous cancer during this period. First primary cancers diagnosed only at autopsy or by death certificate are also excluded as are in situ cancers.

TABLE 1B.—*Microscopic confirmation among persons who developed second primary cancers after an initial cancer of the cervix uteri in Connecticut, 1935-82*

Microscopically confirmed	No.	Percent <sup>a</sup>
Both first and second cancers	533	81.3
Only the first cancer	81	12.3
Only the second cancer	37	5.6
Neither first nor second cancer	5	0.8
Total second primary cancers	656	100.0

<sup>a</sup> Minor discrepancies between table entries and row and column sums in this and subsequent tables are due to rounding.

CERVIX  
FEMALESTABLE 1C.—Observed (O) and expected (E) numbers of second primary cancers by years after diagnosis of an initial cancer of the cervix uteri among females in Connecticut, 1935-82<sup>a</sup>

No. starting interval Person-yr in interval	Yr after first primary cancer diagnosis														
	<1 yr			1-4 yr			5-9 yr			10+ yr			Total		
	8,086 6,041			6,534 18,750			3,741 15,292			2,533 26,183			8,086 66,267		
Second primary cancer site	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E
<b>All second cancers</b>	<b>30</b>	<b>32.19</b>	<b>0.9</b>	<b>137</b>	<b>105.59</b>	<b>1.3<sup>b</sup></b>	<b>124</b>	<b>98.87</b>	<b>1.3<sup>b</sup></b>	<b>365</b>	<b>248.23</b>	<b>1.5<sup>b</sup></b>	<b>656</b>	<b>484.67</b>	<b>1.4<sup>b</sup></b>
<b>All excluding site of initial cancer</b>	<b>30</b>	<b>30.27</b>	<b>1.0</b>	<b>137</b>	<b>99.80</b>	<b>1.4<sup>b</sup></b>	<b>124</b>	<b>94.22</b>	<b>1.3<sup>b</sup></b>	<b>362</b>	<b>241.07</b>	<b>1.5<sup>b</sup></b>	<b>653</b>	<b>465.16</b>	<b>1.4<sup>b</sup></b>
<b>Buccal cavity, pharynx</b>	<b>1</b>	<b>0.52</b>	<b>1.9</b>	<b>4</b>	<b>1.78</b>	<b>2.2</b>	<b>5</b>	<b>1.72</b>	<b>2.9</b>	<b>10</b>	<b>4.43</b>	<b>2.3<sup>b</sup></b>	<b>20</b>	<b>8.45</b>	<b>2.4<sup>b</sup></b>
Lip	0	0.03	0.0	0	0.10	0.0	1	0.09	10.6	0	0.25	0.0	1	0.48	2.1
Tongue	0	0.11	0.0	0	0.36	0.0	2	0.35	5.6	0	0.92	0.0	2	1.75	1.1
Salivary gland	0	0.08	0.0	1	0.26	3.8	0	0.23	0.0	0	0.53	0.0	1	1.10	0.9
Gum, other mouth	1	0.16	6.1	1	0.57	1.8	0	0.57	0.0	5	1.55	3.2 <sup>b</sup>	7	2.85	2.5
Pharynx	0	0.12	0.0	2	0.42	4.8	2	0.41	4.9	5	1.01	4.9 <sup>b</sup>	9	1.96	4.6 <sup>b</sup>
<b>Digestive system</b>	<b>6</b>	<b>8.85</b>	<b>0.7</b>	<b>30</b>	<b>28.56</b>	<b>1.1</b>	<b>32</b>	<b>27.05</b>	<b>1.2</b>	<b>122</b>	<b>75.09</b>	<b>1.6<sup>b</sup></b>	<b>190</b>	<b>139.49</b>	<b>1.4<sup>b</sup></b>
Esophagus	0	0.19	0.0	3	0.63	4.7	1	0.61	1.6	3	1.68	1.8	7	3.11	2.3
Stomach	2	1.38	1.4	6	4.20	1.4	3	3.69	0.8	15	8.67	1.7	26	17.94	1.4
Colon	3	3.87	0.8	9	12.72	0.7	15	12.33	1.2	48	36.15	1.3	75	65.04	1.2
Rectum	1	1.76	0.6	8	5.75	1.4	5	5.44	0.9	39	14.57	2.7 <sup>b</sup>	53	27.51	1.9 <sup>b</sup>
Liver, biliary	0	0.63	0.0	0	1.98	0.0	2	1.83	1.1	6	4.85	1.2	8	9.28	0.9
Pancreas	0	0.80	0.0	3	2.62	1.1	4	2.54	1.6	7	7.76	0.9	14	13.72	1.0
<b>Respiratory system</b>	<b>5</b>	<b>1.47</b>	<b>3.4<sup>b</sup></b>	<b>28</b>	<b>5.20</b>	<b>5.4<sup>b</sup></b>	<b>24</b>	<b>5.25</b>	<b>4.6<sup>b</sup></b>	<b>42</b>	<b>16.08</b>	<b>2.6<sup>b</sup></b>	<b>99</b>	<b>27.99</b>	<b>3.5<sup>b</sup></b>
Nasal cavities, sinuses	0	0.06	0.0	2	0.19	10.5 <sup>b</sup>	0	0.18	0.0	1	0.41	2.4	3	0.84	3.6
Larynx	1	0.10	10.0	2	0.35	5.7	2	0.35	5.7	5	0.93	5.4 <sup>b</sup>	10	1.74	5.7 <sup>b</sup>
Trachea, bronchus, lung	4	1.29	3.1	24	4.58	5.2 <sup>b</sup>	22	4.65	4.7 <sup>b</sup>	36	14.54	2.5 <sup>b</sup>	86	25.05	3.4 <sup>b</sup>
Female breast	4	9.05	0.4	30	29.98	1.0	22	27.92	0.8	51	64.50	0.8	107	131.40	0.8 <sup>b</sup>
<b>Female genital tract</b>	<b>7</b>	<b>6.72</b>	<b>1.0</b>	<b>13</b>	<b>21.58</b>	<b>0.6</b>	<b>23</b>	<b>19.27</b>	<b>1.2</b>	<b>56</b>	<b>40.23</b>	<b>1.4<sup>b</sup></b>	<b>99</b>	<b>87.76</b>	<b>1.1</b>
Cervix uteri	0	1.92	0.0	0	5.79	0.0 <sup>b</sup>	0	4.65	0.0 <sup>b</sup>	3	7.16	0.4	3	19.51	0.2 <sup>b</sup>
Corpus uteri	3	2.10	1.4	3	7.25	0.4	10	7.09	1.4	21	17.60	1.2	37	34.03	1.1
Uterus, NOS	1	0.67	1.5	1	1.92	0.5	2	1.50	1.3	4	2.09	1.9	8	6.18	1.3
Ovary, fallopian tubes	3	1.74	1.7	4	5.69	0.7	8	5.19	1.5	17	11.13	1.5	32	23.74	1.3
Kidney, renal pelvis, ureter	2	0.45	4.5	2	1.51	1.3	0	1.47	0.0	11	4.01	2.7 <sup>b</sup>	15	7.44	2.0 <sup>b</sup>
Bladder, other urinary	1	0.68	1.5	6	2.24	2.7	5	2.20	2.3	28	6.95	4.0 <sup>b</sup>	40	12.07	3.3 <sup>b</sup>
Melanoma of the skin	1	0.39	2.6	1	1.34	0.7	1	1.26	0.8	1	2.81	0.4	4	5.80	0.7
Eye	0	0.06	0.0	1	0.20	5.0	0	0.18	0.0	0	0.42	0.0	1	0.87	1.2
Brain, central nervous system	0	0.36	0.0	1	1.23	0.8	1	1.16	0.9	1	2.66	0.4	3	5.40	0.6
Thyroid gland	0	0.29	0.0	1	0.97	1.0	0	0.86	0.0	0	1.69	0.0	1	3.80	0.3
Bone	0	0.07	0.0	1	0.20	5.0	0	0.17	0.0	1	0.31	3.2	2	0.75	2.7
Connective tissue	0	0.16	0.0	2	0.52	3.9	1	0.45	2.2	2	1.01	2.0	5	2.14	2.3
<b>Lymphatic, hematopoietic system</b>	<b>2</b>	<b>1.78</b>	<b>1.1</b>	<b>9</b>	<b>5.96</b>	<b>1.5</b>	<b>7</b>	<b>5.77</b>	<b>1.2</b>	<b>17</b>	<b>16.57</b>	<b>1.0</b>	<b>35</b>	<b>30.08</b>	<b>1.2</b>
Non-Hodgkin's lymphoma	1	0.65	1.5	7	2.24	3.1 <sup>b</sup>	1	2.20	0.5	7	6.26	1.1	16	11.34	1.4
Hodgkin's disease	0	0.20	0.0	0	0.62	0.0	1	0.54	1.9	1	1.14	0.9	2	2.49	0.8
Multiple myeloma	0	0.25	0.0	0	0.87	0.0	0	0.89	0.0	4	3.05	1.3	4	5.06	0.8
Leukemias	1	0.68	1.5	2	2.21	0.9	5	2.12	2.4	5	6.10	0.8	13	11.10	1.2
Chronic lymphocytic	0	0.15	0.0	0	0.52	0.0	0	0.53	0.0	2	1.81	1.1	2	3.01	0.7
Acute nonlymphocytic	0	0.21	0.0	1	0.70	1.4	0	0.68	0.0	0	2.09	0.0	1	3.68	0.3

<sup>a</sup> ICD-O code = 180.<sup>b</sup>  $P < .05$ .

**CERVIX  
FEMALES  
RADIOTHERAPY**

 TABLE 1D.—*Observed (O) and expected (E) numbers of second primary cancers by years after diagnosis of an initial cancer of the cervix uteri among females given radiotherapy in Connecticut, 1935-82<sup>a</sup>*

No. starting interval Person-yr in interval	Yr after first primary cancer diagnosis														
	<1 yr			1-4 yr			5-9 yr			10+ yr			Total		
	6,509 4,856			5,202 14,546			2,870 11,819			1,974 20,508			6,509 51,730		
Second primary cancer site	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E
<b>All second cancers</b>	<b>24</b>	<b>27.39</b>	<b>0.9</b>	<b>112</b>	<b>87.76</b>	<b>1.3<sup>b</sup></b>	<b>102</b>	<b>80.86</b>	<b>1.3<sup>b</sup></b>	<b>315</b>	<b>199.55</b>	<b>1.6<sup>b</sup></b>	<b>553</b>	<b>395.39</b>	<b>1.4<sup>b</sup></b>
<b>All excluding site of initial cancer</b>	<b>24</b>	<b>25.77</b>	<b>0.9</b>	<b>112</b>	<b>83.01</b>	<b>1.3<sup>b</sup></b>	<b>102</b>	<b>77.10</b>	<b>1.3<sup>b</sup></b>	<b>312</b>	<b>193.81</b>	<b>1.6<sup>b</sup></b>	<b>550</b>	<b>379.53</b>	<b>1.4<sup>b</sup></b>
<b>Buccal cavity, pharynx</b>	<b>1</b>	<b>0.44</b>	<b>2.3</b>	<b>4</b>	<b>1.47</b>	<b>2.7</b>	<b>3</b>	<b>1.39</b>	<b>2.2</b>	<b>7</b>	<b>3.49</b>	<b>2.0</b>	<b>15</b>	<b>6.79</b>	<b>2.2<sup>b</sup></b>
Lip	0	0.03	0.0	0	0.09	0.0	1	0.08	12.5	0	0.20	0.0	1	0.40	2.5
Tongue	0	0.09	0.0	0	0.30	0.0	0	0.29	0.0	0	0.73	0.0	0	1.40	0.0
Salivary gland	0	0.07	0.0	1	0.21	4.7	0	0.19	0.0	0	0.43	0.0	1	0.90	1.1
Gum, other mouth	1	0.14	7.2	1	0.47	2.1	0	0.46	0.0	4	1.22	3.3	6	2.29	2.6
Pharynx	0	0.10	0.0	2	0.34	5.9	2	0.33	6.1	3	0.78	3.8	7	1.55	4.5 <sup>b</sup>
<b>Digestive system</b>	<b>6</b>	<b>7.67</b>	<b>0.8</b>	<b>23</b>	<b>24.48</b>	<b>0.9</b>	<b>26</b>	<b>22.88</b>	<b>1.1</b>	<b>107</b>	<b>61.75</b>	<b>1.7<sup>b</sup></b>	<b>162</b>	<b>116.74</b>	<b>1.4<sup>b</sup></b>
Esophagus	0	0.17	0.0	3	0.54	5.6 <sup>b</sup>	1	0.50	2.0	3	1.34	2.2	7	2.55	2.7 <sup>b</sup>
Stomach	2	1.21	1.6	6	3.67	1.6	2	3.19	0.6	13	7.29	1.8	23	15.36	1.5
Colon	3	3.34	0.9	5	10.85	0.5	12	10.39	1.2	41	29.68	1.4	61	54.25	1.1
Rectum	1	1.53	0.7	6	4.90	1.2	4	4.56	0.9	36	11.88	3.0 <sup>b</sup>	47	22.86	2.1 <sup>b</sup>
Liver, biliary	0	0.55	0.0	0	1.72	0.0	1	1.57	0.6	4	4.05	1.0	5	7.89	0.6
Pancreas	0	0.69	0.0	3	2.24	1.3	4	2.15	1.9	6	6.34	0.9	13	11.42	1.1
<b>Respiratory system</b>	<b>3</b>	<b>1.23</b>	<b>2.4</b>	<b>27</b>	<b>4.22</b>	<b>6.4<sup>b</sup></b>	<b>22</b>	<b>4.16</b>	<b>5.3<sup>b</sup></b>	<b>34</b>	<b>12.45</b>	<b>2.7<sup>b</sup></b>	<b>86</b>	<b>22.05</b>	<b>3.9<sup>b</sup></b>
Nasal cavities, sinuses	0	0.05	0.0	2	0.16	12.5 <sup>b</sup>	0	0.14	0.0	1	0.33	3.0	3	0.68	4.4
Larynx	0	0.08	0.0	2	0.28	7.1	1	0.28	3.6	4	0.72	5.6 <sup>b</sup>	7	1.36	5.2 <sup>b</sup>
Trachea, bronchus, lung	3	1.08	2.8	23	3.71	6.2 <sup>b</sup>	21	3.68	5.7 <sup>b</sup>	29	11.26	2.6 <sup>b</sup>	76	19.72	3.9 <sup>b</sup>
Female breast	3	7.61	0.4	17	24.41	0.7	16	22.31	0.7	36	51.06	0.7 <sup>b</sup>	72	105.34	0.7 <sup>b</sup>
<b>Female genital tract</b>	<b>5</b>	<b>5.73</b>	<b>0.9</b>	<b>12</b>	<b>17.88</b>	<b>0.7</b>	<b>21</b>	<b>15.67</b>	<b>1.3</b>	<b>53</b>	<b>32.04</b>	<b>1.7<sup>b</sup></b>	<b>91</b>	<b>71.30</b>	<b>1.3<sup>b</sup></b>
Cervix uteri	0	1.62	0.0	0	4.75	0.0 <sup>b</sup>	0	3.76	0.0 <sup>b</sup>	3	5.74	0.5	3	15.86	0.2 <sup>b</sup>
Corpus uteri	2	1.79	1.1	3	5.98	0.5	10	5.72	1.7	20	13.82	1.4	35	27.30	1.3
Uterus, NOS	1	0.59	1.7	1	1.67	0.6	2	1.30	1.5	4	1.78	2.2	8	5.34	1.5
Ovary, fallopian tubes	2	1.48	1.4	4	4.70	0.9	7	4.19	1.7	16	8.86	1.8 <sup>b</sup>	29	19.22	1.5 <sup>b</sup>
Kidney, renal pelvis, ureter	2	0.38	5.2	2	1.27	1.6	0	1.22	0.0	11	3.23	3.4 <sup>b</sup>	15	6.10	2.5 <sup>b</sup>
Bladder, other urinary	1	0.58	1.7	6	1.90	3.2 <sup>b</sup>	5	1.84	2.7	28	5.65	5.0 <sup>b</sup>	40	9.96	4.0 <sup>b</sup>
Melanoma of the skin	1	0.31	3.2	1	1.02	1.0	0	0.95	0.0	0	2.18	0.0	2	4.46	0.4
Eye	0	0.05	0.0	1	0.17	5.9	0	0.15	0.0	0	0.34	0.0	1	0.71	1.4
Brain, central nervous system	0	0.30	0.0	1	0.99	1.0	1	0.92	1.1	1	2.08	0.5	3	4.29	0.7
Thyroid gland	0	0.23	0.0	1	0.73	1.4	0	0.66	0.0	0	1.34	0.0	1	2.95	0.3
Bone	0	0.06	0.0	1	0.17	5.8	0	0.14	0.0	1	0.25	3.9	2	0.62	3.2
Connective tissue	0	0.14	0.0	1	0.42	2.4	1	0.37	2.7	1	0.81	1.2	3	1.74	1.7
<b>Lymphatic, hematopoietic system</b>	<b>1</b>	<b>1.51</b>	<b>0.7</b>	<b>8</b>	<b>4.94</b>	<b>1.6</b>	<b>5</b>	<b>4.74</b>	<b>1.1</b>	<b>17</b>	<b>13.44</b>	<b>1.3</b>	<b>31</b>	<b>24.63</b>	<b>1.3</b>
Non-Hodgkin's lymphoma	1	0.55	1.8	6	1.85	3.2 <sup>b</sup>	0	1.79	0.0	7	5.02	1.4	14	9.21	1.5
Hodgkin's disease	0	0.16	0.0	0	0.49	0.0	1	0.43	2.3	1	0.91	1.1	2	1.99	1.0
Multiple myeloma	0	0.21	0.0	0	0.73	0.0	0	0.74	0.0	4	2.47	1.6	4	4.15	1.0
Leukemias	0	0.58	0.0	2	1.85	1.1	4	1.76	2.3	5	5.02	1.0	11	9.21	1.2
Chronic lymphocytic	0	0.13	0.0	0	0.44	0.0	0	0.44	0.0	2	1.49	1.3	2	2.50	0.8
Acute nonlymphocytic	0	0.17	0.0	1	0.57	1.8	0	0.55	0.0	0	1.70	0.0	1	2.99	0.3

<sup>a</sup> ICD-O code = 180.

<sup>b</sup>  $P < .05$ .

**CERVIX  
FEMALES  
NO RADIOTHERAPY**

TABLE 1E.—Observed (O) and expected (E) numbers of second primary cancers by years after diagnosis of an initial cancer of the cervix uteri among females not given radiotherapy in Connecticut, 1935-82<sup>a</sup>

No. starting interval Person-yr in interval	Yr after first primary cancer diagnosis														
	<1 yr			1-4 yr			5-9 yr			10+ yr			Total		
	1,577 1,185			1,332 4,204			871 3,473			559 5,675			1,577 14,537		
Second primary cancer site	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E
<b>All second cancers</b>	<b>6</b>	<b>4.79</b>	<b>1.3</b>	<b>25</b>	<b>17.83</b>	<b>1.4</b>	<b>22</b>	<b>18.01</b>	<b>1.2</b>	<b>50</b>	<b>48.68</b>	<b>1.0</b>	<b>103</b>	<b>89.28</b>	<b>1.2</b>
<b>All excluding site of initial cancer</b>	<b>6</b>	<b>4.50</b>	<b>1.3</b>	<b>25</b>	<b>16.79</b>	<b>1.5</b>	<b>22</b>	<b>17.12</b>	<b>1.3</b>	<b>50</b>	<b>47.26</b>	<b>1.1</b>	<b>103</b>	<b>85.63</b>	<b>1.2</b>
<b>Buccal cavity, pharynx</b>	<b>0</b>	<b>0.08</b>	<b>0.0</b>	<b>0</b>	<b>0.31</b>	<b>0.0</b>	<b>2</b>	<b>0.33</b>	<b>6.0</b>	<b>3</b>	<b>0.94</b>	<b>3.2</b>	<b>5</b>	<b>1.67</b>	<b>3.0</b>
Lip	0	0.00	0.0	0	0.01	0.0	0	0.01	0.0	0	0.04	0.0	0	0.08	0.0
Tongue	0	0.02	0.0	0	0.06	0.0	2	0.07	29.0 <sup>b</sup>	0	0.20	0.0	2	0.35	5.8
Salivary gland	0	0.01	0.0	0	0.05	0.0	0	0.04	0.0	0	0.10	0.0	0	0.21	0.0
Gum, other mouth	0	0.03	0.0	0	0.10	0.0	0	0.11	0.0	1	0.33	3.0	1	0.56	1.8
Pharynx	0	0.02	0.0	0	0.07	0.0	0	0.08	0.0	2	0.23	8.7	2	0.40	4.9
<b>Digestive system</b>	<b>0</b>	<b>1.17</b>	<b>0.0</b>	<b>7</b>	<b>4.08</b>	<b>1.7</b>	<b>6</b>	<b>4.17</b>	<b>1.4</b>	<b>15</b>	<b>13.34</b>	<b>1.1</b>	<b>28</b>	<b>22.75</b>	<b>1.2</b>
Esophagus	0	0.03	0.0	0	0.10	0.0	0	0.10	0.0	0	0.33	0.0	0	0.56	0.0
Stomach	0	0.17	0.0	0	0.53	0.0	1	0.50	2.0	2	1.38	1.4	3	2.58	1.2
Colon	0	0.53	0.0	4	1.87	2.1	3	1.94	1.5	7	6.46	1.1	14	10.79	1.3
Rectum	0	0.23	0.0	2	0.85	2.4	1	0.88	1.1	3	2.69	1.1	6	4.65	1.3
Liver, biliary	0	0.08	0.0	0	0.26	0.0	1	0.25	3.9	2	0.80	2.5	3	1.39	2.2
Pancreas	0	0.11	0.0	0	0.38	0.0	0	0.39	0.0	1	1.42	0.7	1	2.30	0.4
<b>Respiratory system</b>	<b>2</b>	<b>0.24</b>	<b>8.3</b>	<b>1</b>	<b>0.98</b>	<b>1.0</b>	<b>2</b>	<b>1.09</b>	<b>1.8</b>	<b>8</b>	<b>3.62</b>	<b>2.2</b>	<b>13</b>	<b>5.94</b>	<b>2.2<sup>b</sup></b>
Nasal cavities, sinuses	0	0.01	0.0	0	0.03	0.0	0	0.03	0.0	0	0.08	0.0	0	0.16	0.0
Larynx	1	0.02	58.3	0	0.07	0.0	1	0.08	12.9	1	0.22	4.6	3	0.38	7.8 <sup>b</sup>
Trachea, bronchus, lung	1	0.21	4.7	1	0.87	1.2	1	0.97	1.0	7	3.28	2.1	10	5.33	1.9
Female breast	1	1.45	0.7	13	5.57	2.3 <sup>b</sup>	6	5.61	1.1	15	13.45	1.1	35	26.06	1.3
<b>Female genital tract</b>	<b>2</b>	<b>0.99</b>	<b>2.0</b>	<b>1</b>	<b>3.70</b>	<b>0.3</b>	<b>2</b>	<b>3.60</b>	<b>0.6</b>	<b>3</b>	<b>8.19</b>	<b>0.4</b>	<b>8</b>	<b>16.47</b>	<b>0.5<sup>b</sup></b>
Cervix uteri	0	0.29	0.0	0	1.04	0.0	0	0.89	0.0	0	1.42	0.0	0	3.65	0.0
Corpus uteri	1	0.31	3.2	0	1.27	0.0	0	1.37	0.0	1	3.78	0.3	2	6.73	0.3
Uterus, NOS	0	0.08	0.0	0	0.25	0.0	0	0.21	0.0	0	0.31	0.0	0	0.84	0.0
Ovary, fallopian tubes	1	0.26	3.8	0	1.00	0.0	1	0.99	1.0	1	2.27	0.4	3	4.52	0.7
Kidney, renal pelvis, ureter	0	0.07	0.0	0	0.24	0.0	0	0.26	0.0	0	0.78	0.0	0	1.34	0.0
Bladder, other urinary	0	0.10	0.0	0	0.35	0.0	0	0.37	0.0	0	1.29	0.0	0	2.10	0.0
Melanoma of the skin	0	0.08	0.0	0	0.32	0.0	1	0.31	3.3	1	0.63	1.6	2	1.34	1.5
Eye	0	0.01	0.0	0	0.03	0.0	0	0.03	0.0	0	0.08	0.0	0	0.15	0.0
Brain, central nervous system	0	0.06	0.0	0	0.23	0.0	0	0.24	0.0	0	0.58	0.0	0	1.11	0.0
Thyroid gland	0	0.06	0.0	0	0.23	0.0	0	0.20	0.0	0	0.35	0.0	0	0.85	0.0
Bone	0	0.01	0.0	0	0.03	0.0	0	0.03	0.0	0	0.06	0.0	0	0.12	0.0
Connective tissue	0	0.03	0.0	1	0.10	10.5	0	0.09	0.0	1	0.19	5.1	2	0.40	5.0
<b>Lymphatic, hematopoietic system</b>	<b>1</b>	<b>0.28</b>	<b>3.6</b>	<b>1</b>	<b>1.02</b>	<b>1.0</b>	<b>2</b>	<b>1.03</b>	<b>1.9</b>	<b>0</b>	<b>3.13</b>	<b>0.0</b>	<b>4</b>	<b>5.45</b>	<b>0.7</b>
Non-Hodgkin's lymphoma	0	0.10	0.0	1	0.39	2.6	1	0.41	2.4	0	1.24	0.0	2	2.14	0.9
Hodgkin's disease	0	0.04	0.0	0	0.13	0.0	0	0.11	0.0	0	0.23	0.0	0	0.51	0.0
Multiple myeloma	0	0.04	0.0	0	0.14	0.0	0	0.15	0.0	0	0.58	0.0	0	0.91	0.0
Leukemias	1	0.10	10.0	0	0.36	0.0	1	0.36	2.8	0	1.08	0.0	2	1.89	1.1
Chronic lymphocytic	0	0.02	0.0	0	0.08	0.0	0	0.08	0.0	0	0.32	0.0	0	0.50	0.0
Acute nonlymphocytic	0	0.03	0.0	0	0.13	0.0	0	0.13	0.0	0	0.39	0.0	0	0.69	0.0

<sup>a</sup> ICD-O code = 180.

<sup>b</sup>  $P < .05$ .

**CERVIX  
FEMALES  
LONG-TERM SURVIVORS**

TABLE 1F.—Observed (O) and expected (E) numbers of second primary cancers by years after diagnosis of an initial cancer of the cervix uteri among females, long-term survivors in Connecticut, 1935-82<sup>a</sup>

No. starting interval Person-yr in interval	Yr after first primary cancer diagnosis														
	1-9 yr			10-19 yr			20-29 yr			30+ yr			Total (<1-30+ yr)		
	6,534 34,043			2,533 17,807			1,173 6,884			323 1,493			8,086 66,267		
Second primary cancer site	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E
<b>All second cancers</b>	<b>261</b>	<b>204.39</b>	<b>1.3<sup>b</sup></b>	<b>205</b>	<b>148.67</b>	<b>1.4<sup>b</sup></b>	<b>116</b>	<b>77.47</b>	<b>1.5<sup>b</sup></b>	<b>44</b>	<b>22.14</b>	<b>2.0<sup>b</sup></b>	<b>656</b>	<b>484.67</b>	<b>1.4<sup>b</sup></b>
<b>All excluding site of initial cancer</b>	<b>261</b>	<b>193.95</b>	<b>1.3<sup>b</sup></b>	<b>204</b>	<b>143.55</b>	<b>1.4<sup>b</sup></b>	<b>114</b>	<b>75.75</b>	<b>1.5<sup>b</sup></b>	<b>44</b>	<b>21.82</b>	<b>2.0<sup>b</sup></b>	<b>653</b>	<b>465.16</b>	<b>1.4<sup>b</sup></b>
<b>Buccal cavity, pharynx</b>	<b>9</b>	<b>3.50</b>	<b>2.6<sup>b</sup></b>	<b>7</b>	<b>2.69</b>	<b>2.6<sup>b</sup></b>	<b>3</b>	<b>1.39</b>	<b>2.2</b>	<b>0</b>	<b>0.35</b>	<b>0.0</b>	<b>20</b>	<b>8.45</b>	<b>2.4<sup>b</sup></b>
Lip	1	0.20	5.0	0	0.15	0.0	0	0.08	0.0	0	0.03	0.0	1	0.48	2.1
Tongue	2	0.72	2.8	0	0.56	0.0	0	0.29	0.0	0	0.07	0.0	2	1.75	1.1
Salivary gland	1	0.49	2.0	0	0.33	0.0	0	0.16	0.0	0	0.04	0.0	1	1.10	0.9
Gum, other mouth	1	1.13	0.9	2	0.92	2.2	3	0.50	6.0 <sup>b</sup>	0	0.14	0.0	7	2.85	2.5
Pharynx	4	0.82	4.9 <sup>b</sup>	5	0.64	7.8 <sup>b</sup>	0	0.31	0.0	0	0.07	0.0	9	1.96	4.6 <sup>b</sup>
<b>Digestive system</b>	<b>62</b>	<b>55.59</b>	<b>1.1</b>	<b>70</b>	<b>43.10</b>	<b>1.6<sup>b</sup></b>	<b>38</b>	<b>24.29</b>	<b>1.6<sup>b</sup></b>	<b>14</b>	<b>7.72</b>	<b>1.8</b>	<b>190</b>	<b>139.49</b>	<b>1.4<sup>b</sup></b>
Esophagus	4	1.24	3.2	2	0.97	2.1	0	0.54	0.0	1	0.16	6.1	7	3.11	2.3
Stomach	9	7.89	1.1	9	5.26	1.7	6	2.63	2.3	0	0.78	0.0	26	17.94	1.4
Colon	24	25.04	1.0	30	20.33	1.5	14	11.89	1.2	4	3.94	1.0	75	65.04	1.2
Rectum	13	11.19	1.2	22	8.53	2.6 <sup>b</sup>	10	4.65	2.2 <sup>b</sup>	7	1.40	5.0 <sup>b</sup>	53	27.51	1.9 <sup>b</sup>
Liver, biliary	2	3.80	0.5	2	2.84	0.7	3	1.54	1.9	1	0.48	2.1	8	9.28	0.9
Pancreas	7	5.16	1.4	3	4.31	0.7	3	2.61	1.2	1	0.84	1.2	14	13.72	1.0
<b>Respiratory system</b>	<b>52</b>	<b>10.45</b>	<b>5.0<sup>b</sup></b>	<b>32</b>	<b>9.02</b>	<b>3.5<sup>b</sup></b>	<b>8</b>	<b>5.51</b>	<b>1.5</b>	<b>2</b>	<b>1.55</b>	<b>1.3</b>	<b>99</b>	<b>27.99</b>	<b>3.5<sup>b</sup></b>
Nasal cavities, sinuses	2	0.37	5.5	1	0.25	3.9	0	0.13	0.0	0	0.03	0.0	3	0.84	3.6
Larynx	4	0.71	5.7 <sup>b</sup>	3	0.56	5.3 <sup>b</sup>	2	0.30	6.7	0	0.07	0.0	10	1.74	5.7 <sup>b</sup>
Trachea, bronchus, lung	46	9.22	5.0 <sup>b</sup>	28	8.09	3.5 <sup>b</sup>	6	5.02	1.2	2	1.43	1.4	86	25.05	3.4 <sup>b</sup>
Female breast	52	57.88	0.9	26	40.01	0.6 <sup>b</sup>	19	19.37	1.0	6	5.13	1.2	107	131.40	0.8 <sup>b</sup>
<b>Female genital tract</b>	<b>36</b>	<b>40.84</b>	<b>0.9</b>	<b>28</b>	<b>26.15</b>	<b>1.1</b>	<b>19</b>	<b>11.48</b>	<b>1.7</b>	<b>9</b>	<b>2.61</b>	<b>3.5<sup>b</sup></b>	<b>99</b>	<b>87.76</b>	<b>1.1</b>
Cervix uteri	0	10.44	0.0 <sup>b</sup>	1	5.12	0.2	2	1.72	1.2	0	0.32	0.0	3	19.51	0.2 <sup>b</sup>
Corpus uteri	13	14.33	0.9	11	11.01	1.0	7	5.39	1.3	3	1.21	2.5	37	34.03	1.1
Uterus, NOS	3	3.43	0.9	2	1.56	1.3	2	0.44	4.5	0	0.08	0.0	8	6.18	1.3
Ovary, fallopian tubes	12	10.88	1.1	7	7.16	1.0	4	3.21	1.2	6	0.76	7.9 <sup>b</sup>	32	23.74	1.3
Kidney, renal pelvis, ureter	2	2.98	0.7	2	2.34	0.9	7	1.31	5.4 <sup>b</sup>	2	0.37	5.5	15	7.44	2.0 <sup>b</sup>
Bladder, other urinary	11	4.45	2.5 <sup>b</sup>	15	3.81	3.9 <sup>b</sup>	8	2.35	3.4 <sup>b</sup>	5	0.79	6.3 <sup>b</sup>	40	12.07	3.3 <sup>b</sup>
Melanoma of the skin	2	2.60	0.8	0	1.74	0.0	1	0.85	1.2	0	0.22	0.0	4	5.80	0.7
Eye	1	0.38	2.6	0	0.26	0.0	0	0.13	0.0	0	0.03	0.0	1	0.87	1.2
Brain, central nervous system	2	2.39	0.8	1	1.68	0.6	0	0.80	0.0	0	0.18	0.0	3	5.40	0.6
Thyroid gland	1	1.83	0.5	0	1.10	0.0	0	0.48	0.0	0	0.11	0.0	1	3.80	0.3
Bone	1	0.37	2.7	1	0.20	5.0	0	0.09	0.0	0	0.02	0.0	2	0.75	2.7
Connective tissue	3	0.97	3.1	0	0.63	0.0	1	0.30	3.4	1	0.08	12.1	5	2.14	2.3
<b>Lymphatic, hematopoietic system</b>	<b>16</b>	<b>11.73</b>	<b>1.4</b>	<b>10</b>	<b>9.40</b>	<b>1.1</b>	<b>5</b>	<b>5.43</b>	<b>0.9</b>	<b>2</b>	<b>1.74</b>	<b>1.1</b>	<b>35</b>	<b>30.08</b>	<b>1.2</b>
Non-Hodgkin's lymphoma	8	4.44	1.8	5	3.57	1.4	2	2.04	1.0	0	0.64	0.0	16	11.34	1.4
Hodgkin's disease	1	1.16	0.9	1	0.73	1.4	0	0.34	0.0	0	0.07	0.0	2	2.49	0.8
Multiple myeloma	0	1.76	0.0	1	1.64	0.6	1	1.06	0.9	2	0.35	5.6	4	5.06	0.8
Leukemias	7	4.33	1.6	3	3.44	0.9	2	2.00	1.0	0	0.67	0.0	13	11.10	1.2
Chronic lymphocytic	0	1.04	0.0	1	0.97	1.0	1	0.63	1.6	0	0.22	0.0	2	3.01	0.7
Acute nonlymphocytic	1	1.38	0.7	0	1.14	0.0	0	0.70	0.0	0	0.25	0.0	1	3.68	0.3

<sup>a</sup> ICD-O code = 180.

<sup>b</sup>  $P < .05$ .

**CERVIX  
FEMALES  
LONG-TERM SURVIVORS  
RADIOTHERAPY**

TABLE 1G.—Observed (O) and expected (E) numbers of second primary cancers by years after diagnosis of an initial cancer of the cervix uteri among females given radiotherapy, long-term survivors in Connecticut, 1935–82<sup>a</sup>

No. starting interval Person-yr in interval	Yr after first primary cancer diagnosis														
	1–9 yr			10–19 yr			20–29 yr			30+ yr			Total (<1–30+ yr)		
	5,202 26,366			1,974 13,914			906 5,353			258 1,241			6,509 51,730		
Second primary cancer site	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E
<b>All second cancers</b>	<b>214</b>	<b>168.56</b>	<b>1.3<sup>b</sup></b>	<b>180</b>	<b>119.97</b>	<b>1.5<sup>b</sup></b>	<b>98</b>	<b>61.07</b>	<b>1.6<sup>b</sup></b>	<b>37</b>	<b>18.55</b>	<b>2.0<sup>b</sup></b>	<b>553</b>	<b>395.39</b>	<b>1.4<sup>b</sup></b>
<b>All excluding site of initial cancer</b>	<b>214</b>	<b>160.06</b>	<b>1.3<sup>b</sup></b>	<b>179</b>	<b>115.87</b>	<b>1.5<sup>b</sup></b>	<b>96</b>	<b>59.70</b>	<b>1.6<sup>b</sup></b>	<b>37</b>	<b>18.28</b>	<b>2.0<sup>b</sup></b>	<b>550</b>	<b>379.53</b>	<b>1.4<sup>b</sup></b>
<b>Buccal cavity, pharynx</b>	<b>7</b>	<b>2.86</b>	<b>2.5</b>	<b>5</b>	<b>2.13</b>	<b>2.3</b>	<b>2</b>	<b>1.07</b>	<b>1.9</b>	<b>0</b>	<b>0.29</b>	<b>0.0</b>	<b>15</b>	<b>6.79</b>	<b>2.2<sup>b</sup></b>
Lip	1	0.17	5.9	0	0.12	0.0	0	0.06	0.0	0	0.02	0.0	1	0.40	2.5
Tongue	0	0.59	0.0	0	0.45	0.0	0	0.22	0.0	0	0.06	0.0	0	1.40	0.0
Salivary gland	1	0.40	2.5	0	0.26	0.0	0	0.13	0.0	0	0.04	0.0	1	0.90	1.1
Gum, other mouth	1	0.92	1.1	2	0.73	2.8	2	0.39	5.2	0	0.11	0.0	6	2.29	2.6
Pharynx	4	0.67	6.0 <sup>b</sup>	3	0.50	6.0 <sup>b</sup>	0	0.23	0.0	0	0.05	0.0	7	1.55	4.5 <sup>b</sup>
<b>Digestive system</b>	<b>49</b>	<b>47.35</b>	<b>1.0</b>	<b>62</b>	<b>35.66</b>	<b>1.7<sup>b</sup></b>	<b>33</b>	<b>19.57</b>	<b>1.7<sup>b</sup></b>	<b>12</b>	<b>6.53</b>	<b>1.8</b>	<b>162</b>	<b>116.74</b>	<b>1.4<sup>b</sup></b>
Esophagus	4	1.04	3.8 <sup>b</sup>	2	0.78	2.6	0	0.42	0.0	1	0.14	7.3	7	2.55	2.7 <sup>b</sup>
Stomach	8	6.86	1.2	7	4.46	1.6	6	2.17	2.8 <sup>b</sup>	0	0.67	0.0	23	15.36	1.5
Colon	17	21.24	0.8	26	16.78	1.5 <sup>b</sup>	12	9.58	1.3	3	3.33	0.9	61	54.25	1.1
Rectum	10	9.46	1.1	20	7.00	2.9 <sup>b</sup>	9	3.71	2.4 <sup>b</sup>	7	1.18	5.9 <sup>b</sup>	47	22.86	2.1 <sup>b</sup>
Liver, biliary	1	3.29	0.3	2	2.39	0.8	1	1.26	0.8	1	0.41	2.5	5	7.89	0.6
Pancreas	7	4.39	1.6	3	3.55	0.8	3	2.08	1.4	0	0.71	0.0	13	11.42	1.1
<b>Respiratory system</b>	<b>49</b>	<b>8.37</b>	<b>5.9<sup>b</sup></b>	<b>26</b>	<b>7.09</b>	<b>3.7<sup>b</sup></b>	<b>7</b>	<b>4.12</b>	<b>1.7</b>	<b>1</b>	<b>1.25</b>	<b>0.8</b>	<b>86</b>	<b>22.05</b>	<b>3.9<sup>b</sup></b>
Nasal cavities, sinuses	2	0.30	6.6	1	0.20	4.9	0	0.10	0.0	0	0.02	0.0	3	0.68	4.4
Larynx	3	0.56	5.4 <sup>b</sup>	2	0.44	4.6	2	0.22	9.0 <sup>b</sup>	0	0.06	0.0	7	1.36	5.2 <sup>b</sup>
Trachea, bronchus, lung	44	7.39	6.0 <sup>b</sup>	23	6.36	3.6 <sup>b</sup>	5	3.75	1.3	1	1.15	0.9	76	19.72	3.9 <sup>b</sup>
Female breast	33	46.71	0.7 <sup>b</sup>	19	31.69	0.6 <sup>b</sup>	11	15.09	0.7	6	4.28	1.4	72	105.34	0.7 <sup>b</sup>
<b>Female genital tract</b>	<b>33</b>	<b>33.55</b>	<b>1.0</b>	<b>27</b>	<b>20.92</b>	<b>1.3</b>	<b>19</b>	<b>8.96</b>	<b>2.1<sup>b</sup></b>	<b>7</b>	<b>2.16</b>	<b>3.2<sup>b</sup></b>	<b>91</b>	<b>71.30</b>	<b>1.3<sup>b</sup></b>
Cervix uteri	0	8.50	0.0 <sup>b</sup>	1	4.10	0.2	2	1.37	1.5	0	0.27	0.0	3	15.86	0.2 <sup>b</sup>
Corpus uteri	13	11.70	1.1	11	8.70	1.3	7	4.13	1.7	2	0.99	2.0	35	27.30	1.3
Uterus, NOS	3	2.97	1.0	2	1.33	1.5	2	0.37	5.4	0	0.07	0.0	8	5.34	1.5
Ovary, fallopian tubes	11	8.89	1.2	7	5.71	1.2	4	2.52	1.6	5	0.64	7.9 <sup>b</sup>	29	19.22	1.5 <sup>b</sup>
Kidney, renal pelvis, ureter	2	2.48	0.8	2	1.90	1.1	7	1.03	6.8 <sup>b</sup>	2	0.30	6.6	15	6.10	2.5 <sup>b</sup>
Bladder, other urinary	11	3.73	2.9 <sup>b</sup>	15	3.11	4.8 <sup>b</sup>	8	1.88	4.3 <sup>b</sup>	5	0.67	7.5 <sup>b</sup>	40	9.96	4.0 <sup>b</sup>
Melanoma of the skin	1	1.97	0.5	0	1.35	0.0	0	0.65	0.0	0	0.18	0.0	2	4.46	0.4
Eye	1	0.32	3.1	0	0.21	0.0	0	0.10	0.0	0	0.03	0.0	1	0.71	1.4
Brain, central nervous system	2	1.91	1.0	1	1.32	0.8	0	0.61	0.0	0	0.15	0.0	3	4.29	0.7
Thyroid gland	1	1.39	0.7	0	0.87	0.0	0	0.37	0.0	0	0.09	0.0	1	2.95	0.3
Bone	1	0.31	3.2	1	0.16	6.1	0	0.07	0.0	0	0.02	0.0	2	0.62	3.2
Connective tissue	2	0.79	2.5	0	0.51	0.0	1	0.24	4.2	0	0.07	0.0	3	1.74	1.7
<b>Lymphatic, hematopoietic system</b>	<b>13</b>	<b>9.68</b>	<b>1.3</b>	<b>10</b>	<b>7.65</b>	<b>1.3</b>	<b>5</b>	<b>4.32</b>	<b>1.2</b>	<b>2</b>	<b>1.48</b>	<b>1.4</b>	<b>31</b>	<b>24.63</b>	<b>1.3</b>
Non-Hodgkin's lymphoma	6	3.64	1.6	5	2.88	1.7	2	1.60	1.3	0	0.54	0.0	14	9.21	1.5
Hodgkin's disease	1	0.92	1.1	1	0.59	1.7	0	0.27	0.0	0	0.06	0.0	2	1.99	1.0
Multiple myeloma	0	1.47	0.0	1	1.33	0.8	1	0.84	1.2	2	0.30	6.6	4	4.15	1.0
Leukemias	6	3.62	1.7	3	2.83	1.1	2	1.62	1.2	0	0.57	0.0	11	9.21	1.2
Chronic lymphocytic	0	0.88	0.0	1	0.80	1.3	1	0.51	2.0	0	0.19	0.0	2	2.50	0.8
Acute nonlymphocytic	1	1.12	0.9	0	0.92	0.0	0	0.56	0.0	0	0.21	0.0	1	2.99	0.3

<sup>a</sup> ICD-O code = 180.

<sup>b</sup>  $P < .05$ .

**CERVIX  
FEMALES  
LONG-TERM SURVIVORS  
NO RADIOTHERAPY**

TABLE 1H.—Observed (O) and expected (E) numbers of second primary cancers by years after diagnosis of an initial cancer of the cervix uteri among females not given radiotherapy, long-term survivors in Connecticut, 1935–82<sup>a</sup>

No. starting interval Person-yr in interval	Yr after first primary cancer diagnosis														
	1–9 yr			10–19 yr			20–29 yr			30+ yr			Total (<1–30+ yr)		
	1,332 7,677			559 3,893			267 1,530			65 251			1,577 14,537		
Second primary cancer site	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E
<b>All second cancers</b>	<b>47</b>	<b>35.83</b>	<b>1.3</b>	<b>25</b>	<b>28.69</b>	<b>0.9</b>	<b>18</b>	<b>16.41</b>	<b>1.1</b>	<b>7</b>	<b>3.59</b>	<b>2.0</b>	<b>103</b>	<b>89.28</b>	<b>1.2</b>
<b>All excluding site of initial cancer</b>	<b>47</b>	<b>33.89</b>	<b>1.4<sup>b</sup></b>	<b>25</b>	<b>27.68</b>	<b>0.9</b>	<b>18</b>	<b>16.06</b>	<b>1.1</b>	<b>7</b>	<b>3.54</b>	<b>2.0</b>	<b>103</b>	<b>85.63</b>	<b>1.2</b>
<b>Buccal cavity, pharynx</b>	<b>2</b>	<b>0.64</b>	<b>3.1</b>	<b>2</b>	<b>0.56</b>	<b>3.6</b>	<b>1</b>	<b>0.32</b>	<b>3.1</b>	<b>0</b>	<b>0.06</b>	<b>0.0</b>	<b>5</b>	<b>1.67</b>	<b>3.0</b>
Lip	0	0.03	0.0	0	0.03	0.0	0	0.01	0.0	0	0.00	0.0	0	0.08	0.0
Tongue	2	0.13	15.1 <sup>b</sup>	0	0.12	0.0	0	0.07	0.0	0	0.01	0.0	2	0.35	5.8
Salivary gland	0	0.09	0.0	0	0.06	0.0	0	0.03	0.0	0	0.01	0.0	0	0.21	0.0
Gum, other mouth	0	0.21	0.0	0	0.19	0.0	1	0.12	8.7	0	0.02	0.0	1	0.56	1.8
Pharynx	0	0.16	0.0	2	0.14	14.3 <sup>b</sup>	0	0.08	0.0	0	0.01	0.0	2	0.40	4.9
<b>Digestive system</b>	<b>13</b>	<b>8.24</b>	<b>1.6</b>	<b>8</b>	<b>7.44</b>	<b>1.1</b>	<b>5</b>	<b>4.72</b>	<b>1.1</b>	<b>2</b>	<b>1.19</b>	<b>1.7</b>	<b>28</b>	<b>22.75</b>	<b>1.2</b>
Esophagus	0	0.20	0.0	0	0.19	0.0	0	0.12	0.0	0	0.03	0.0	0	0.56	0.0
Stomach	1	1.03	1.0	2	0.80	2.5	0	0.46	0.0	0	0.11	0.0	3	2.58	1.2
Colon	7	3.80	1.8	4	3.55	1.1	2	2.31	0.9	1	0.61	1.7	14	10.79	1.3
Rectum	3	1.73	1.7	2	1.53	1.3	1	0.94	1.1	0	0.22	0.0	6	4.65	1.3
Liver, biliary	1	0.51	1.9	0	0.45	0.0	2	0.28	7.1	0	0.07	0.0	3	1.39	2.2
Pancreas	0	0.77	0.0	0	0.77	0.0	0	0.52	0.0	1	0.13	7.6	1	2.30	0.4
<b>Respiratory system</b>	<b>3</b>	<b>2.07</b>	<b>1.4</b>	<b>6</b>	<b>1.93</b>	<b>3.1<sup>b</sup></b>	<b>1</b>	<b>1.39</b>	<b>0.7</b>	<b>1</b>	<b>0.30</b>	<b>3.3</b>	<b>13</b>	<b>5.94</b>	<b>2.2<sup>b</sup></b>
Nasal cavities, sinuses	0	0.06	0.0	0	0.05	0.0	0	0.03	0.0	0	0.01	0.0	0	0.16	0.0
Larynx	1	0.15	6.8	1	0.13	7.8	0	0.08	0.0	0	0.01	0.0	3	0.38	7.8 <sup>b</sup>
Trachea, bronchus, lung	2	1.84	1.1	5	1.73	2.9	1	1.27	0.8	1	0.28	3.6	10	5.33	1.9
Female breast	19	11.18	1.7 <sup>b</sup>	7	8.31	0.8	8	4.29	1.9	0	0.85	0.0	35	26.06	1.3
<b>Female genital tract</b>	<b>3</b>	<b>7.30</b>	<b>0.4</b>	<b>1</b>	<b>5.23</b>	<b>0.2</b>	<b>0</b>	<b>2.52</b>	<b>0.0</b>	<b>2</b>	<b>0.44</b>	<b>4.5</b>	<b>8</b>	<b>16.47</b>	<b>0.5<sup>b</sup></b>
Cervix uteri	0	1.94	0.0	0	1.01	0.0	0	0.35	0.0	0	0.05	0.0	0	3.65	0.0
Corpus uteri	0	2.63	0.0	0	2.31	0.0	0	1.26	0.0	1	0.22	4.6	2	6.73	0.3
Uterus, NOS	0	0.46	0.0	0	0.23	0.0	0	0.07	0.0	0	0.01	0.0	0	0.84	0.0
Ovary, fallopian tubes	1	1.99	0.5	0	1.45	0.0	0	0.70	0.0	1	0.13	7.8	3	4.52	0.7
Kidney, renal pelvis, ureter	0	0.50	0.0	0	0.44	0.0	0	0.28	0.0	0	0.06	0.0	0	1.34	0.0
Bladder, other urinary	0	0.71	0.0	0	0.70	0.0	0	0.48	0.0	0	0.12	0.0	0	2.10	0.0
Melanoma of the skin	1	0.63	1.6	0	0.39	0.0	1	0.20	5.0	0	0.04	0.0	2	1.34	1.5
Eye	0	0.06	0.0	0	0.05	0.0	0	0.03	0.0	0	0.01	0.0	0	0.15	0.0
Brain, central nervous system	0	0.47	0.0	0	0.36	0.0	0	0.18	0.0	0	0.04	0.0	0	1.11	0.0
Thyroid gland	0	0.44	0.0	0	0.23	0.0	0	0.10	0.0	0	0.02	0.0	0	0.85	0.0
Bone	0	0.06	0.0	0	0.04	0.0	0	0.02	0.0	0	0.00	0.0	0	0.12	0.0
Connective tissue	1	0.18	5.5	0	0.12	0.0	0	0.06	0.0	1	0.01	71.5	2	0.40	5.0
<b>Lymphatic, hematopoietic system</b>	<b>3</b>	<b>2.05</b>	<b>1.5</b>	<b>0</b>	<b>1.75</b>	<b>0.0</b>	<b>0</b>	<b>1.11</b>	<b>0.0</b>	<b>0</b>	<b>0.27</b>	<b>0.0</b>	<b>4</b>	<b>5.45</b>	<b>0.7</b>
Non-Hodgkin's lymphoma	2	0.80	2.5	0	0.69	0.0	0	0.44	0.0	0	0.11	0.0	2	2.14	0.9
Hodgkin's disease	0	0.24	0.0	0	0.14	0.0	0	0.07	0.0	0	0.01	0.0	0	0.51	0.0
Multiple myeloma	0	0.29	0.0	0	0.31	0.0	0	0.22	0.0	0	0.05	0.0	0	0.91	0.0
Leukemias	1	0.71	1.4	0	0.60	0.0	0	0.38	0.0	0	0.10	0.0	2	1.89	1.1
Chronic lymphocytic	0	0.16	0.0	0	0.17	0.0	0	0.12	0.0	0	0.03	0.0	0	0.50	0.0
Acute nonlymphocytic	0	0.26	0.0	0	0.22	0.0	0	0.14	0.0	0	0.04	0.0	0	0.69	0.0

<sup>a</sup> ICD-O code = 180.

<sup>b</sup>  $P < .05$ .

**CORPUS  
FEMALES**

TABLE 2A.—*Characteristics of persons reported to the Connecticut Tumor Registry with an initial cancer of the corpus uteri or uterus, NOS, 1935–82<sup>a</sup>*

Category	Male	Female	Total
No. with first primary cancer <sup>b</sup>	0	11,652	11,652
No. who developed a second primary cancer	0	1,060	1,060
Average age at diagnosis of first cancer, yr	0	60	60
Average yr of diagnosis of first cancer	0	1964	1964
Person-yr of follow-up	0	95,367	95,367
Average follow-up, yr	0.0	8.2	8.2
Percent given radiotherapy for first cancer	0.0	59.0	59.0

<sup>a</sup> ICD-O codes = 179, 182.

<sup>b</sup> Number excludes all persons who survived less than 2 mo after the diagnosis of their first primary cancer or who developed a simultaneous cancer during this period. First primary cancers diagnosed only at autopsy or by death certificate are also excluded as are in situ cancers.

TABLE 2B.—*Microscopic confirmation among persons who developed second primary cancers after an initial cancer of the corpus uteri or uterus, NOS in Connecticut, 1935–82*

Microscopically confirmed	No.	Percent <sup>a</sup>
Both first and second cancers	954	90.0
Only the first cancer	84	7.9
Only the second cancer	18	1.7
Neither first nor second cancer	4	0.4
Total second primary cancers	1,060	100.0

<sup>a</sup> Minor discrepancies between table entries and row and column sums in this and subsequent tables are due to rounding.

**CORPUS  
FEMALES**

 TABLE 2C.—Observed (O) and expected (E) numbers of second primary cancers by years after diagnosis of an initial cancer of the corpus uteri or uterus, NOS among females in Connecticut, 1935–82<sup>a</sup>

No. starting interval Person-yr in interval	Yr after first primary cancer diagnosis														
	<1 yr			1–4 yr			5–9 yr			10+ yr			Total		
	11,652 8,855			9,930 31,109			6,279 24,417			3,718 30,987			11,652 95,367		
Second primary cancer site	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E
<b>All second cancers</b>	<b>84</b>	<b>71.39</b>	<b>1.2</b>	<b>301</b>	<b>259.76</b>	<b>1.2<sup>b</sup></b>	<b>260</b>	<b>224.85</b>	<b>1.2<sup>b</sup></b>	<b>415</b>	<b>359.11</b>	<b>1.2<sup>b</sup></b>	<b>1,060</b>	<b>914.64</b>	<b>1.2<sup>b</sup></b>
<b>All excluding site of initial cancer</b>	<b>83</b>	<b>65.25</b>	<b>1.3<sup>b</sup></b>	<b>301</b>	<b>237.50</b>	<b>1.3<sup>b</sup></b>	<b>260</b>	<b>206.30</b>	<b>1.3<sup>b</sup></b>	<b>415</b>	<b>333.69</b>	<b>1.2<sup>b</sup></b>	<b>1,059</b>	<b>842.31</b>	<b>1.3<sup>b</sup></b>
<b>Buccal cavity, pharynx</b>	<b>3</b>	<b>1.29</b>	<b>2.3</b>	<b>2</b>	<b>4.78</b>	<b>0.4</b>	<b>1</b>	<b>4.09</b>	<b>0.2</b>	<b>9</b>	<b>6.08</b>	<b>1.5</b>	<b>15</b>	<b>16.24</b>	<b>0.9</b>
Lip	1	0.07	13.9	0	0.26	0.0	0	0.22	0.0	0	0.39	0.0	1	0.94	1.1
Tongue	0	0.27	0.0	1	0.99	1.0	0	0.85	0.0	1	1.26	0.8	2	3.36	0.6
Salivary gland	1	0.16	6.3	1	0.57	1.8	0	0.49	0.0	1	0.76	1.3	3	1.97	1.5
Gum, other mouth	0	0.44	0.0	0	1.62	0.0	1	1.41	0.7	3	2.21	1.4	4	5.67	0.7
Pharynx	1	0.31	3.3	0	1.14	0.0	0	0.96	0.0	3	1.27	2.4	4	3.68	1.1
<b>Digestive system</b>	<b>18</b>	<b>20.63</b>	<b>0.9</b>	<b>104</b>	<b>74.74</b>	<b>1.4<sup>b</sup></b>	<b>101</b>	<b>67.11</b>	<b>1.5<sup>b</sup></b>	<b>154</b>	<b>118.55</b>	<b>1.3<sup>b</sup></b>	<b>377</b>	<b>280.89</b>	<b>1.3<sup>b</sup></b>
Esophagus	1	0.48	2.1	1	1.77	0.6	2	1.54	1.3	1	2.51	0.4	5	6.30	0.8
Stomach	2	2.75	0.7	11	9.53	1.2	9	8.22	1.1	11	13.79	0.8	33	34.29	1.0
Colon	7	9.46	0.7	50	34.62	1.4 <sup>b</sup>	52	31.63	1.6 <sup>b</sup>	83	57.78	1.4 <sup>b</sup>	192	133.43	1.4 <sup>b</sup>
Rectum	3	4.07	0.7	22	14.84	1.5	23	13.16	1.7 <sup>b</sup>	38	22.12	1.7 <sup>b</sup>	86	54.16	1.6 <sup>b</sup>
Liver, biliary	1	1.39	0.7	5	4.95	1.0	6	4.43	1.4	6	7.80	0.8	18	18.56	1.0
Pancreas	4	2.04	2.0	13	7.48	1.7	5	6.80	0.7	13	12.42	1.0	35	28.74	1.2
<b>Respiratory system</b>	<b>2</b>	<b>4.46</b>	<b>0.4</b>	<b>26</b>	<b>17.06</b>	<b>1.5</b>	<b>21</b>	<b>14.96</b>	<b>1.4</b>	<b>31</b>	<b>22.97</b>	<b>1.3</b>	<b>80</b>	<b>59.43</b>	<b>1.3<sup>b</sup></b>
Nasal cavities, sinuses	0	0.13	0.0	1	0.45	2.2	0	0.38	0.0	0	0.57	0.0	1	1.53	0.7
Larynx	0	0.28	0.0	1	1.04	1.0	1	0.87	1.1	0	1.21	0.0	2	3.40	0.6
Trachea, bronchus, lung	2	4.01	0.5	24	15.37	1.6 <sup>b</sup>	20	13.53	1.5	31	20.93	1.5 <sup>b</sup>	77	53.81	1.4 <sup>b</sup>
Female breast	16	19.13	0.8	104	69.37	1.5 <sup>b</sup>	72	58.35	1.2	105	87.30	1.2	297	234.01	1.3 <sup>b</sup>
<b>Female genital tract</b>	<b>31</b>	<b>12.88</b>	<b>2.4<sup>b</sup></b>	<b>10</b>	<b>46.04</b>	<b>0.2<sup>b</sup></b>	<b>12</b>	<b>37.93</b>	<b>0.3<sup>b</sup></b>	<b>11</b>	<b>51.60</b>	<b>0.2<sup>b</sup></b>	<b>64</b>	<b>148.36</b>	<b>0.4<sup>b</sup></b>
Cervix uteri	3	2.69	1.1	2	9.17	0.2 <sup>b</sup>	1	7.06	0.1 <sup>b</sup>	1	8.19	0.1 <sup>b</sup>	7	27.10	0.3 <sup>b</sup>
Corpus uteri	1	5.17	0.2	0	19.13	0.0 <sup>b</sup>	0	16.19	0.0 <sup>b</sup>	0	22.73	0.0 <sup>b</sup>	1	63.19	0.0 <sup>b</sup>
Uterus, NOS	0	0.97	0.0	0	3.13	0.0	0	2.36	0.0	0	2.69	0.0	0	9.14	0.0 <sup>b</sup>
Ovary, fallopian tubes	22	3.43	6.4 <sup>b</sup>	4	12.34	0.3 <sup>b</sup>	7	10.31	0.7	2	14.46	0.1 <sup>b</sup>	35	40.52	0.9
Kidney, renal pelvis, ureter	2	1.10	1.8	7	4.07	1.7	6	3.62	1.7	16	5.94	2.7 <sup>b</sup>	31	14.72	2.1 <sup>b</sup>
Bladder, other urinary	3	1.81	1.7	8	6.67	1.2	6	6.03	1.0	27	11.24	2.4 <sup>b</sup>	44	25.73	1.7 <sup>b</sup>
Melanoma of the skin	2	0.83	2.4	3	3.07	1.0	5	2.53	2.0	2	3.68	0.5	12	10.10	1.2
Eye	1	0.12	8.0	0	0.45	0.0	0	0.38	0.0	2	0.59	3.4	3	1.55	1.9
Brain, central nervous system	1	0.77	1.3	5	2.87	1.7	1	2.44	0.4	3	3.38	0.9	10	9.46	1.1
Thyroid gland	1	0.52	1.9	3	1.85	1.6	2	1.52	1.3	6	2.19	2.7 <sup>b</sup>	12	6.07	2.0 <sup>b</sup>
Bone	0	0.11	0.0	0	0.39	0.0	0	0.32	0.0	2	0.44	4.6	2	1.26	1.6
Connective tissue	0	0.30	0.0	0	1.08	0.0	2	0.92	2.2	4	1.42	2.8	6	3.73	1.6
<b>Lymphatic, hematopoietic system</b>	<b>3</b>	<b>4.32</b>	<b>0.7</b>	<b>18</b>	<b>16.02</b>	<b>1.1</b>	<b>24</b>	<b>14.48</b>	<b>1.7<sup>b</sup></b>	<b>27</b>	<b>25.52</b>	<b>1.1</b>	<b>72</b>	<b>60.31</b>	<b>1.2</b>
Non-Hodgkin's lymphoma	0	1.66	0.0	4	6.24	0.6	7	5.61	1.2	6	9.40	0.6	17	22.90	0.7
Hodgkin's disease	0	0.33	0.0	0	1.20	0.0	1	1.02	1.0	2	1.51	1.3	3	4.06	0.7
Multiple myeloma	3	0.73	4.1	2	2.77	0.7	6	2.57	2.3	6	4.85	1.2	17	10.92	1.6
Leukemias	0	1.57	0.0	12	5.77	2.1 <sup>b</sup>	10	5.25	1.9	13	9.74	1.3	35	22.32	1.6 <sup>b</sup>
Chronic lymphocytic	0	0.43	0.0	4	1.60	2.5	3	1.50	2.0	4	2.99	1.3	11	6.51	1.7
Acute nonlymphocytic	0	0.51	0.0	4	1.93	2.1	4	1.77	2.3	3	3.33	0.9	11	7.54	1.5

<sup>a</sup> ICD-O codes = 179, 182.

<sup>b</sup>  $P < .05$ .

**CORPUS  
FEMALES  
RADIOTHERAPY**

TABLE 2D.—Observed (O) and expected (E) numbers of second primary cancers by years after diagnosis of an initial cancer of the corpus uteri or uterus, NOS among females given radiotherapy in Connecticut, 1935–82<sup>a</sup>

No. starting interval Person-yr in interval	Yr after first primary cancer diagnosis														
	<1 yr			1–4 yr			5–9 yr			10+ yr			Total		
	6,879 5,190			5,772 17,428			3,405 12,851			1,869 14,167			6,879 49,635		
Second primary cancer site	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E
<b>All second cancers</b>	<b>64</b>	<b>44.66</b>	<b>1.4<sup>b</sup></b>	<b>188</b>	<b>155.98</b>	<b>1.2<sup>b</sup></b>	<b>151</b>	<b>127.04</b>	<b>1.2<sup>b</sup></b>	<b>204</b>	<b>173.74</b>	<b>1.2<sup>b</sup></b>	<b>607</b>	<b>501.15</b>	<b>1.2<sup>b</sup></b>
<b>All excluding site of initial cancer</b>	<b>63</b>	<b>40.84</b>	<b>1.5<sup>b</sup></b>	<b>188</b>	<b>142.76</b>	<b>1.3<sup>b</sup></b>	<b>151</b>	<b>116.82</b>	<b>1.3<sup>b</sup></b>	<b>204</b>	<b>161.94</b>	<b>1.3<sup>b</sup></b>	<b>606</b>	<b>462.13</b>	<b>1.3<sup>b</sup></b>
<b>Buccal cavity, pharynx</b>	<b>1</b>	<b>0.81</b>	<b>1.2</b>	<b>1</b>	<b>2.89</b>	<b>0.3</b>	<b>0</b>	<b>2.31</b>	<b>0.0</b>	<b>2</b>	<b>2.88</b>	<b>0.7</b>	<b>4</b>	<b>8.89</b>	<b>0.4</b>
Lip	0	0.05	0.0	0	0.16	0.0	0	0.13	0.0	0	0.19	0.0	0	0.52	0.0
Tongue	0	0.17	0.0	1	0.59	1.7	0	0.48	0.0	0	0.60	0.0	1	1.84	0.5
Salivary gland	1	0.10	10.2	0	0.34	0.0	0	0.28	0.0	0	0.37	0.0	1	1.08	0.9
Gum, other mouth	0	0.28	0.0	0	0.99	0.0	0	0.80	0.0	0	1.05	0.0	0	3.12	0.0
Pharynx	0	0.19	0.0	0	0.69	0.0	0	0.53	0.0	1	0.58	1.7	1	1.99	0.5
<b>Digestive system</b>	<b>16</b>	<b>13.14</b>	<b>1.2</b>	<b>65</b>	<b>45.82</b>	<b>1.4<sup>b</sup></b>	<b>61</b>	<b>38.82</b>	<b>1.6<sup>b</sup></b>	<b>82</b>	<b>58.90</b>	<b>1.4<sup>b</sup></b>	<b>224</b>	<b>156.60</b>	<b>1.4<sup>b</sup></b>
Esophagus	0	0.31	0.0	1	1.09	0.9	2	0.89	2.3	1	1.23	0.8	4	3.51	1.1
Stomach	1	1.76	0.6	5	5.87	0.9	7	4.76	1.5	7	6.96	1.0	20	19.33	1.0
Colon	7	6.02	1.2	34	21.24	1.6 <sup>b</sup>	25	18.37	1.4	41	28.75	1.4 <sup>b</sup>	107	74.35	1.4 <sup>b</sup>
Rectum	3	2.58	1.2	12	9.01	1.3	18	7.51	2.4 <sup>b</sup>	22	10.85	2.0 <sup>b</sup>	55	29.93	1.8 <sup>b</sup>
Liver, biliary	1	0.89	1.1	4	3.04	1.3	4	2.57	1.6	4	3.91	1.0	13	10.41	1.2
Pancreas	4	1.31	3.0	7	4.63	1.5	3	3.97	0.8	6	6.16	1.0	20	16.07	1.2
<b>Respiratory system</b>	<b>2</b>	<b>2.86</b>	<b>0.7</b>	<b>20</b>	<b>10.52</b>	<b>1.9<sup>b</sup></b>	<b>13</b>	<b>8.66</b>	<b>1.5</b>	<b>14</b>	<b>10.94</b>	<b>1.3</b>	<b>49</b>	<b>32.96</b>	<b>1.5<sup>b</sup></b>
Nasal cavities, sinuses	0	0.08	0.0	1	0.27	3.8	0	0.22	0.0	0	0.28	0.0	1	0.84	1.2
Larynx	0	0.17	0.0	1	0.63	1.6	0	0.49	0.0	0	0.56	0.0	1	1.85	0.5
Trachea, bronchus, lung	2	2.57	0.8	18	9.50	1.9 <sup>b</sup>	13	7.86	1.7	14	9.99	1.4	47	29.90	1.6 <sup>b</sup>
Female breast	9	11.79	0.8	66	40.96	1.6 <sup>b</sup>	34	32.36	1.1	43	41.44	1.0	152	126.47	1.2 <sup>b</sup>
<b>Female genital tract</b>	<b>27</b>	<b>7.88</b>	<b>3.4<sup>b</sup></b>	<b>5</b>	<b>26.88</b>	<b>0.2<sup>b</sup></b>	<b>7</b>	<b>20.65</b>	<b>0.3<sup>b</sup></b>	<b>5</b>	<b>24.02</b>	<b>0.2<sup>b</sup></b>	<b>44</b>	<b>79.39</b>	<b>0.6<sup>b</sup></b>
Cervix uteri	3	1.57	1.9	0	5.09	0.0 <sup>b</sup>	0	3.66	0.0	0	3.72	0.0 <sup>b</sup>	3	14.03	0.2 <sup>b</sup>
Corpus uteri	1	3.23	0.3	0	11.41	0.0 <sup>b</sup>	0	8.95	0.0 <sup>b</sup>	0	10.48	0.0 <sup>b</sup>	1	34.04	0.0 <sup>b</sup>
Uterus, NOS	0	0.59	0.0	0	1.81	0.0	0	1.27	0.0	0	1.32	0.0	0	4.98	0.0 <sup>b</sup>
Ovary, fallopian tubes	19	2.10	9.1 <sup>b</sup>	2	7.20	0.3	4	5.62	0.7	1	6.76	0.1 <sup>b</sup>	26	21.66	1.2
Kidney, renal pelvis, ureter	2	0.70	2.9	2	2.48	0.8	4	2.07	1.9	8	2.87	2.8 <sup>b</sup>	16	8.11	2.0 <sup>b</sup>
Bladder, other urinary	2	1.17	1.7	4	4.14	1.0	5	3.54	1.4	10	5.60	1.8	21	14.43	1.5
Melanoma of the skin	1	0.51	2.0	2	1.80	1.1	3	1.40	2.1	1	1.72	0.6	7	5.43	1.3
Eye	1	0.08	12.9	0	0.27	0.0	0	0.21	0.0	0	0.28	0.0	1	0.83	1.2
Brain, central nervous system	1	0.48	2.1	3	1.68	1.8	0	1.34	0.0	1	1.55	0.6	5	5.05	1.0
Thyroid gland	0	0.31	0.0	2	1.06	1.9	1	0.82	1.2	4	1.04	3.9 <sup>b</sup>	7	3.23	2.2
Bone	0	0.07	0.0	0	0.23	0.0	0	0.18	0.0	2	0.21	9.5 <sup>b</sup>	2	0.69	2.9
Connective tissue	0	0.19	0.0	0	0.64	0.0	1	0.51	2.0	2	0.69	2.9	3	2.02	1.5
<b>Lymphatic, hematopoietic system</b>	<b>2</b>	<b>2.72</b>	<b>0.7</b>	<b>10</b>	<b>9.71</b>	<b>1.0</b>	<b>17</b>	<b>8.30</b>	<b>2.0<sup>b</sup></b>	<b>18</b>	<b>12.52</b>	<b>1.4</b>	<b>47</b>	<b>33.22</b>	<b>1.4<sup>b</sup></b>
Non-Hodgkin's lymphoma	0	1.05	0.0	1	3.79	0.3	4	3.21	1.2	4	4.58	0.9	9	12.62	0.7
Hodgkin's disease	0	0.20	0.0	0	0.69	0.0	1	0.56	1.8	1	0.71	1.4	2	2.16	0.9
Multiple myeloma	2	0.47	4.3	1	1.70	0.6	5	1.49	3.4 <sup>b</sup>	4	2.38	1.7	12	6.04	2.0 <sup>b</sup>
Leukemias	0	0.99	0.0	8	3.50	2.3	7	3.02	2.3	9	4.85	1.9	24	12.35	1.9 <sup>b</sup>
Chronic lymphocytic	0	0.27	0.0	2	0.99	2.0	0	0.88	0.0	1	1.49	0.7	3	3.63	0.8
Acute nonlymphocytic	0	0.32	0.0	4	1.17	3.4	4	1.02	3.9 <sup>b</sup>	2	1.65	1.2	10	4.16	2.4 <sup>b</sup>

<sup>a</sup> ICD-O codes = 179, 182.

<sup>b</sup>  $P < .05$ .

**CORPUS  
FEMALES  
NO RADIOTHERAPY**

TABLE 2E.—Observed (O) and expected (E) numbers of second primary cancers by years after diagnosis of an initial cancer of the corpus uteri or uterus, NOS among females not given radiotherapy in Connecticut, 1935–82<sup>a</sup>

No. starting interval Person-yr in interval	Yr after first primary cancer diagnosis														
	<1 yr			1–4 yr			5–9 yr			10+ yr			Total		
	4,773 3,665			4,158 13,681			2,874 11,566			1,849 16,820			4,773 45,732		
Second primary cancer site	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E
<b>All second cancers</b>	<b>20</b>	<b>26.73</b>	<b>0.7</b>	<b>113</b>	<b>103.78</b>	<b>1.1</b>	<b>109</b>	<b>97.81</b>	<b>1.1</b>	<b>211</b>	<b>185.37</b>	<b>1.1</b>	<b>453</b>	<b>413.50</b>	<b>1.1</b>
<b>All excluding site of initial cancer</b>	<b>20</b>	<b>24.41</b>	<b>0.8</b>	<b>113</b>	<b>94.73</b>	<b>1.2</b>	<b>109</b>	<b>89.48</b>	<b>1.2<sup>b</sup></b>	<b>211</b>	<b>171.73</b>	<b>1.2<sup>b</sup></b>	<b>453</b>	<b>380.19</b>	<b>1.2<sup>b</sup></b>
<b>Buccal cavity, pharynx</b>	<b>2</b>	<b>0.48</b>	<b>4.2</b>	<b>1</b>	<b>1.89</b>	<b>0.5</b>	<b>1</b>	<b>1.78</b>	<b>0.6</b>	<b>7</b>	<b>3.20</b>	<b>2.2</b>	<b>11</b>	<b>7.35</b>	<b>1.5</b>
Lip	1	0.03	37.7	0	0.10	0.0	0	0.10	0.0	0	0.19	0.0	1	0.42	2.4
Tongue	0	0.10	0.0	0	0.39	0.0	0	0.37	0.0	1	0.66	1.5	1	1.52	0.7
Salivary gland	0	0.06	0.0	1	0.23	4.3	0	0.21	0.0	1	0.39	2.5	2	0.90	2.2
Gum, other mouth	0	0.16	0.0	0	0.64	0.0	1	0.60	1.7	3	1.15	2.6	4	2.55	1.6
Pharynx	1	0.11	8.8	0	0.46	0.0	0	0.43	0.0	2	0.69	2.9	3	1.69	1.8
<b>Digestive system</b>	<b>2</b>	<b>7.48</b>	<b>0.3<sup>b</sup></b>	<b>39</b>	<b>28.92</b>	<b>1.3</b>	<b>40</b>	<b>28.29</b>	<b>1.4<sup>b</sup></b>	<b>72</b>	<b>59.64</b>	<b>1.2</b>	<b>153</b>	<b>124.29</b>	<b>1.2<sup>b</sup></b>
Esophagus	1	0.17	5.8	0	0.68	0.0	0	0.65	0.0	0	1.29	0.0	1	2.79	0.4
Stomach	1	0.99	1.0	6	3.67	1.6	2	3.47	0.6	4	6.83	0.6	13	14.95	0.9
Colon	0	3.44	0.0	16	13.38	1.2	27	13.27	2.0 <sup>b</sup>	42	29.03	1.4 <sup>b</sup>	85	59.08	1.4 <sup>b</sup>
Rectum	0	1.50	0.0	10	5.82	1.7	5	5.65	0.9	16	11.27	1.4	31	24.23	1.3
Liver, biliary	0	0.50	0.0	1	1.91	0.5	2	1.86	1.1	2	3.89	0.5	5	8.15	0.6
Pancreas	0	0.73	0.0	6	2.86	2.1	2	2.83	0.7	7	6.26	1.1	15	12.68	1.2
<b>Respiratory system</b>	<b>0</b>	<b>1.61</b>	<b>0.0</b>	<b>6</b>	<b>6.54</b>	<b>0.9</b>	<b>8</b>	<b>6.30</b>	<b>1.3</b>	<b>17</b>	<b>12.03</b>	<b>1.4</b>	<b>31</b>	<b>26.46</b>	<b>1.2</b>
Nasal cavities, sinuses	0	0.05	0.0	0	0.18	0.0	0	0.17	0.0	0	0.30	0.0	0	0.69	0.0
Larynx	0	0.10	0.0	0	0.41	0.0	1	0.38	2.6	0	0.65	0.0	1	1.55	0.6
Trachea, bronchus, lung	0	1.44	0.0	6	5.87	1.0	7	5.68	1.2	17	10.94	1.6	30	23.91	1.3
Female breast	7	7.34	1.0	38	28.41	1.3	38	25.99	1.5 <sup>b</sup>	62	45.85	1.4 <sup>b</sup>	145	107.54	1.3 <sup>b</sup>
<b>Female genital tract</b>	<b>4</b>	<b>4.99</b>	<b>0.8</b>	<b>5</b>	<b>19.15</b>	<b>0.3<sup>b</sup></b>	<b>5</b>	<b>17.28</b>	<b>0.3<sup>b</sup></b>	<b>6</b>	<b>27.58</b>	<b>0.2<sup>b</sup></b>	<b>20</b>	<b>68.97</b>	<b>0.3<sup>b</sup></b>
Cervix uteri	0	1.11	0.0	2	4.08	0.5	1	3.41	0.3	1	4.47	0.2	4	13.07	0.3 <sup>b</sup>
Corpus uteri	0	1.94	0.0	0	7.73	0.0 <sup>b</sup>	0	7.24	0.0 <sup>b</sup>	0	12.26	0.0 <sup>b</sup>	0	29.15	0.0 <sup>b</sup>
Uterus, NOS	0	0.38	0.0	0	1.32	0.0	0	1.09	0.0	0	1.38	0.0	0	4.16	0.0 <sup>b</sup>
Ovary, fallopian tubes	3	1.33	2.3	2	5.15	0.4	3	4.69	0.6	1	7.70	0.1 <sup>b</sup>	9	18.86	0.5 <sup>b</sup>
Kidney, renal pelvis, ureter	0	0.40	0.0	5	1.59	3.1 <sup>b</sup>	2	1.54	1.3	8	3.06	2.6 <sup>b</sup>	15	6.60	2.3 <sup>b</sup>
Bladder, other urinary	1	0.65	1.5	4	2.52	1.6	1	2.49	0.4	17	5.64	3.0 <sup>b</sup>	23	11.30	2.0 <sup>b</sup>
Melanoma of the skin	1	0.33	3.1	1	1.26	0.8	2	1.13	1.8	1	1.95	0.5	5	4.67	1.1
Eye	0	0.05	0.0	0	0.18	0.0	0	0.17	0.0	2	0.31	6.4	2	0.71	2.8
Brain, central nervous system	0	0.30	0.0	2	1.19	1.7	1	1.10	0.9	2	1.83	1.1	5	4.42	1.1
Thyroid gland	1	0.21	4.9	1	0.79	1.3	1	0.70	1.4	2	1.15	1.7	5	2.84	1.8
Bone	0	0.04	0.0	0	0.16	0.0	0	0.14	0.0	0	0.23	0.0	0	0.57	0.0
Connective tissue	0	0.12	0.0	0	0.45	0.0	1	0.41	2.4	2	0.73	2.7	3	1.71	1.8
<b>Lymphatic, hematopoietic system</b>	<b>1</b>	<b>1.60</b>	<b>0.6</b>	<b>8</b>	<b>6.31</b>	<b>1.3</b>	<b>7</b>	<b>6.19</b>	<b>1.1</b>	<b>9</b>	<b>13.01</b>	<b>0.7</b>	<b>25</b>	<b>27.09</b>	<b>0.9</b>
Non-Hodgkin's lymphoma	0	0.61	0.0	3	2.45	1.2	3	2.40	1.3	2	4.82	0.4	8	10.28	0.8
Hodgkin's disease	0	0.13	0.0	0	0.51	0.0	0	0.46	0.0	1	0.81	1.2	1	1.91	0.5
Multiple myeloma	1	0.26	3.8	1	1.06	0.9	1	1.08	0.9	2	2.47	0.8	5	4.88	1.0
Leukemias	0	0.58	0.0	4	2.27	1.8	3	2.23	1.3	4	4.90	0.8	11	9.97	1.1
Chronic lymphocytic	0	0.15	0.0	2	0.61	3.3	3	0.62	4.8	3	1.50	2.0	8	2.88	2.8 <sup>b</sup>
Acute nonlymphocytic	0	0.19	0.0	0	0.76	0.0	0	0.75	0.0	1	1.68	0.6	1	3.38	0.3

<sup>a</sup> ICD-O codes = 179, 182.

<sup>b</sup>  $P < .05$ .

**CORPUS  
FEMALES  
LONG-TERM SURVIVORS**

TABLE 2F.—Observed (O) and expected (E) numbers of second primary cancers by years after diagnosis of an initial cancer of the corpus uteri or uterus, NOS among females, long-term survivors in Connecticut, 1935–82<sup>a</sup>

No. starting interval Person-yr in interval	Yr after first primary cancer diagnosis														
	1-9 yr			10-19 yr			20-29 yr			30+ yr			Total (<1-30+ yr)		
	9,930 55,525	3,718 23,003	1,232 6,831	280 1,153	11,652 95,367										
Second primary cancer site	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E
All second cancers	561	484.46	1.2 <sup>b</sup>	267	248.99	1.1	123	92.09	1.3 <sup>b</sup>	25	18.08	1.4	1,060	914.64	1.2 <sup>b</sup>
All excluding site of initial cancer	561	443.67	1.3 <sup>b</sup>	267	230.28	1.2 <sup>b</sup>	123	86.33	1.4 <sup>b</sup>	25	17.12	1.5	1,059	842.31	1.3 <sup>b</sup>
Buccal cavity, pharynx	3	8.87	0.3 <sup>b</sup>	4	4.32	0.9	3	1.48	2.0	2	0.28	7.1	15	16.24	0.9
Lip	0	0.48	0.0	0	0.26	0.0	0	0.10	0.0	0	0.02	0.0	1	0.94	1.1
Tongue	1	1.84	0.5	0	0.90	0.0	0	0.30	0.0	1	0.06	18.1	2	3.36	0.6
Salivary gland	1	1.06	0.9	1	0.53	1.9	0	0.19	0.0	0	0.04	0.0	3	1.97	1.5
Gum, other mouth	1	3.03	0.3	2	1.53	1.3	1	0.56	1.8	0	0.11	0.0	4	5.67	0.7
Pharynx	0	2.10	0.0	1	0.94	1.1	1	0.28	3.6	1	0.05	20.3	4	3.68	1.1
Digestive system	205	141.81	1.4 <sup>b</sup>	92	80.03	1.1	54	31.98	1.7 <sup>b</sup>	8	6.56	1.2	377	280.89	1.3 <sup>b</sup>
Esophagus	3	3.31	0.9	0	1.72	0.0	0	0.66	0.0	1	0.14	7.4	5	6.30	0.8
Stomach	20	17.75	1.1	4	9.54	0.4	7	3.57	2.0	0	0.68	0.0	33	34.29	1.0
Colon	102	66.23	1.5 <sup>b</sup>	49	38.52	1.3	31	15.93	1.9 <sup>b</sup>	3	3.34	0.9	192	133.43	1.4 <sup>b</sup>
Rectum	45	27.99	1.6 <sup>b</sup>	25	15.16	1.6 <sup>b</sup>	10	5.79	1.7	3	1.17	2.6	86	54.16	1.6 <sup>b</sup>
Liver, biliary	11	9.38	1.2	4	5.33	0.8	2	2.06	1.0	0	0.41	0.0	18	18.56	1.0
Pancreas	18	14.28	1.3	8	8.28	1.0	4	3.43	1.2	1	0.72	1.4	35	28.74	1.2
Respiratory system	47	32.01	1.5 <sup>b</sup>	24	15.92	1.5	6	5.91	1.0	1	1.15	0.9	80	59.43	1.3 <sup>b</sup>
Nasal cavities, sinuses	1	0.83	1.2	0	0.41	0.0	0	0.14	0.0	0	0.02	0.0	1	1.53	0.7
Larynx	2	1.91	1.0	0	0.87	0.0	0	0.29	0.0	0	0.05	0.0	2	3.40	0.6
Trachea, bronchus, lung	44	28.89	1.5 <sup>b</sup>	24	14.46	1.7 <sup>b</sup>	6	5.42	1.1	1	1.06	0.9	77	53.81	1.4 <sup>b</sup>
Female breast	176	127.67	1.4 <sup>b</sup>	68	61.60	1.1	34	21.60	1.6 <sup>b</sup>	3	4.10	0.7	297	234.01	1.3 <sup>b</sup>
Female genital tract	22	83.94	0.3 <sup>b</sup>	8	37.90	0.2 <sup>b</sup>	2	11.73	0.2 <sup>b</sup>	1	1.99	0.5	64	148.36	0.4 <sup>b</sup>
Cervix uteri	3	16.23	0.2 <sup>b</sup>	0	6.30	0.0 <sup>b</sup>	1	1.65	0.6	0	0.25	0.0	7	27.10	0.3 <sup>b</sup>
Corpus uteri	0	35.31	0.0 <sup>b</sup>	0	16.61	0.0 <sup>b</sup>	0	5.25	0.0 <sup>b</sup>	0	0.88	0.0	1	63.19	0.0 <sup>b</sup>
Uterus, NOS	0	5.48	0.0 <sup>b</sup>	0	2.10	0.0	0	0.51	0.0	0	0.08	0.0	0	9.14	0.0 <sup>b</sup>
Ovary, fallopian tubes	11	22.65	0.5 <sup>b</sup>	1	10.51	0.1 <sup>b</sup>	0	3.36	0.0	1	0.59	1.7	35	40.52	0.9
Kidney, renal pelvis, ureter	13	7.68	1.7	9	4.12	2.2	6	1.54	3.9 <sup>b</sup>	1	0.28	3.6	31	14.72	2.1 <sup>b</sup>
Bladder, other urinary	14	12.69	1.1	16	7.41	2.2 <sup>b</sup>	5	3.14	1.6	6	0.69	8.7 <sup>b</sup>	44	25.73	1.7 <sup>b</sup>
Melanoma of the skin	8	5.59	1.4	1	2.60	0.4	1	0.91	1.1	0	0.18	0.0	12	10.10	1.2
Eye	0	0.83	0.0	1	0.42	2.4	1	0.14	6.9	0	0.03	0.0	3	1.55	1.9
Brain, central nervous system	6	5.31	1.1	3	2.49	1.2	0	0.77	0.0	0	0.13	0.0	10	9.46	1.1
Thyroid gland	5	3.37	1.5	6	1.57	3.8 <sup>b</sup>	0	0.53	0.0	0	0.09	0.0	12	6.07	2.0 <sup>b</sup>
Bone	0	0.71	0.0	1	0.32	3.1	1	0.10	10.3	0	0.02	0.0	2	1.26	1.6
Connective tissue	2	2.00	1.0	2	0.99	2.0	1	0.36	2.7	1	0.07	14.2	6	3.73	1.6
Lymphatic, hematopoietic system	42	30.49	1.4	20	17.13	1.2	5	6.94	0.7	2	1.46	1.4	72	60.31	1.2
Non-Hodgkin's lymphoma	11	11.85	0.9	5	6.38	0.8	0	2.50	0.0	1	0.52	1.9	17	22.90	0.7
Hodgkin's disease	1	2.22	0.5	2	1.11	1.8	0	0.35	0.0	0	0.05	0.0	3	4.06	0.7
Multiple myeloma	8	5.34	1.5	4	3.19	1.3	1	1.37	0.7	1	0.29	3.4	17	10.92	1.6
Leukemias	22	11.01	2.0 <sup>b</sup>	9	6.43	1.4	4	2.72	1.5	0	0.59	0.0	35	22.32	1.6 <sup>b</sup>
Chronic lymphocytic	7	3.09	2.3	1	1.94	0.5	3	0.86	3.5	0	0.19	0.0	11	6.51	1.7
Acute nonlymphocytic	8	3.70	2.2	2	2.17	0.9	1	0.95	1.1	0	0.22	0.0	11	7.54	1.5

<sup>a</sup> ICD-O codes = 179, 182.

<sup>b</sup>  $P < .05$ .

**CORPUS  
FEMALES  
LONG-TERM SURVIVORS  
RADIOTHERAPY**

TABLE 2G.—Observed (O) and expected (E) numbers of second primary cancers by years after diagnosis of an initial cancer of the corpus uteri or uterus, NOS among females given radiotherapy, long-term survivors in Connecticut, 1935–82<sup>a</sup>

No. starting interval Person-yr in interval	Yr after first primary cancer diagnosis														
	1–9 yr			10–19 yr			20–29 yr			30+ yr			Total (<1–30+ yr)		
	5,772 30,279			1,869 10,973			534 2,827			93 366			6,879 49,635		
Second primary cancer site	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E
<b>All second cancers</b>	<b>339</b>	<b>282.93</b>	<b>1.2<sup>b</sup></b>	<b>132</b>	<b>127.62</b>	<b>1.0</b>	<b>64</b>	<b>40.16</b>	<b>1.6<sup>b</sup></b>	<b>8</b>	<b>5.99</b>	<b>1.3</b>	<b>607</b>	<b>501.15</b>	<b>1.2<sup>b</sup></b>
<b>All excluding site of initial cancer</b>	<b>339</b>	<b>259.50</b>	<b>1.3<sup>b</sup></b>	<b>132</b>	<b>118.50</b>	<b>1.1</b>	<b>64</b>	<b>37.79</b>	<b>1.7<sup>b</sup></b>	<b>8</b>	<b>5.69</b>	<b>1.4</b>	<b>606</b>	<b>462.13</b>	<b>1.3<sup>b</sup></b>
<b>Buccal cavity, pharynx</b>	<b>1</b>	<b>5.20</b>	<b>0.2</b>	<b>1</b>	<b>2.16</b>	<b>0.5</b>	<b>1</b>	<b>0.63</b>	<b>1.6</b>	<b>0</b>	<b>0.09</b>	<b>0.0</b>	<b>4</b>	<b>8.89</b>	<b>0.4</b>
Lip	0	0.28	0.0	0	0.14	0.0	0	0.05	0.0	0	0.01	0.0	0	0.52	0.0
Tongue	1	1.07	0.9	0	0.45	0.0	0	0.13	0.0	0	0.02	0.0	1	1.84	0.5
Salivary gland	0	0.61	0.0	0	0.27	0.0	0	0.08	0.0	0	0.01	0.0	1	1.08	0.9
Gum, other mouth	0	1.79	0.0	0	0.78	0.0	0	0.24	0.0	0	0.03	0.0	0	3.12	0.0
Pharynx	0	1.22	0.0	1	0.45	2.2	0	0.11	0.0	0	0.01	0.0	1	1.99	0.5
<b>Digestive system</b>	<b>126</b>	<b>84.61</b>	<b>1.5<sup>b</sup></b>	<b>48</b>	<b>42.34</b>	<b>1.1</b>	<b>31</b>	<b>14.33</b>	<b>2.2<sup>b</sup></b>	<b>3</b>	<b>2.24</b>	<b>1.3</b>	<b>224</b>	<b>156.60</b>	<b>1.4<sup>b</sup></b>
Esophagus	3	1.97	1.5	0	0.89	0.0	0	0.29	0.0	1	0.05	22.2	4	3.51	1.1
Stomach	12	10.62	1.1	2	5.09	0.4	5	1.63	3.1	0	0.24	0.0	20	19.33	1.0
Colon	59	39.60	1.5 <sup>b</sup>	25	20.46	1.2	15	7.16	2.1 <sup>b</sup>	1	1.14	0.9	107	74.35	1.4 <sup>b</sup>
Rectum	30	16.52	1.8 <sup>b</sup>	13	7.90	1.6	8	2.55	3.1 <sup>b</sup>	1	0.40	2.5	55	29.93	1.8 <sup>b</sup>
Liver, biliary	8	5.61	1.4	3	2.84	1.1	1	0.93	1.1	0	0.14	0.0	13	10.41	1.2
Pancreas	10	8.59	1.2	4	4.39	0.9	2	1.53	1.3	0	0.24	0.0	20	16.07	1.2
<b>Respiratory system</b>	<b>33</b>	<b>19.17</b>	<b>1.7<sup>b</sup></b>	<b>11</b>	<b>8.11</b>	<b>1.4</b>	<b>3</b>	<b>2.49</b>	<b>1.2</b>	<b>0</b>	<b>0.34</b>	<b>0.0</b>	<b>49</b>	<b>32.96</b>	<b>1.5<sup>b</sup></b>
Nasal cavities, sinuses	1	0.48	2.1	0	0.21	0.0	0	0.06	0.0	0	0.01	0.0	1	0.84	1.2
Larynx	1	1.12	0.9	0	0.42	0.0	0	0.12	0.0	0	0.02	0.0	1	1.85	0.5
Trachea, bronchus, lung	31	17.35	1.8 <sup>b</sup>	11	7.39	1.5	3	2.29	1.3	0	0.32	0.0	47	29.90	1.6 <sup>b</sup>
Female breast	100	73.29	1.4 <sup>b</sup>	26	30.86	0.8	16	9.25	1.7	1	1.34	0.7	152	126.47	1.2 <sup>b</sup>
<b>Female genital tract</b>	<b>12</b>	<b>47.52</b>	<b>0.3<sup>b</sup></b>	<b>5</b>	<b>18.51</b>	<b>0.3<sup>b</sup></b>	<b>0</b>	<b>4.89</b>	<b>0.0<sup>b</sup></b>	<b>0</b>	<b>0.63</b>	<b>0.0</b>	<b>44</b>	<b>79.39</b>	<b>0.6<sup>b</sup></b>
Cervix uteri	0	8.75	0.0 <sup>b</sup>	0	2.96	0.0	0	0.68	0.0	0	0.08	0.0	3	14.03	0.2 <sup>b</sup>
Corpus uteri	0	20.35	0.0 <sup>b</sup>	0	8.07	0.0 <sup>b</sup>	0	2.14	0.0	0	0.27	0.0	1	34.04	0.0 <sup>b</sup>
Uterus, NOS	0	3.08	0.0	0	1.05	0.0	0	0.23	0.0	0	0.03	0.0	0	4.98	0.0 <sup>b</sup>
Ovary, fallopian tubes	6	12.82	0.5	1	5.16	0.2	0	1.41	0.0	0	0.19	0.0	26	21.66	1.2
Kidney, renal pelvis, ureter	6	4.55	1.3	5	2.12	2.4	3	0.67	4.5	0	0.09	0.0	16	8.11	2.0 <sup>b</sup>
Bladder, other urinary	9	7.68	1.2	6	3.95	1.5	2	1.41	1.4	2	0.24	8.5	21	14.43	1.5
Melanoma of the skin	5	3.20	1.6	0	1.29	0.0	1	0.38	2.6	0	0.06	0.0	7	5.43	1.3
Eye	0	0.48	0.0	0	0.21	0.0	0	0.06	0.0	0	0.01	0.0	1	0.83	1.2
Brain, central nervous system	3	3.02	1.0	1	1.20	0.8	0	0.31	0.0	0	0.04	0.0	5	5.05	1.0
Thyroid gland	3	1.88	1.6	4	0.78	5.1 <sup>b</sup>	0	0.22	0.0	0	0.03	0.0	7	3.23	2.2
Bone	0	0.41	0.0	1	0.16	6.1	1	0.04	24.0	0	0.01	0.0	2	0.69	2.9
Connective tissue	1	1.14	0.9	1	0.51	2.0	0	0.16	0.0	1	0.02	42.4	3	2.02	1.5
<b>Lymphatic, hematopoietic system</b>	<b>27</b>	<b>18.00</b>	<b>1.5</b>	<b>14</b>	<b>8.96</b>	<b>1.6</b>	<b>3</b>	<b>3.07</b>	<b>1.0</b>	<b>1</b>	<b>0.49</b>	<b>2.0</b>	<b>47</b>	<b>33.22</b>	<b>1.4<sup>b</sup></b>
Non-Hodgkin's lymphoma	5	7.00	0.7	4	3.31	1.2	0	1.10	0.0	0	0.17	0.0	9	12.62	0.7
Hodgkin's disease	1	1.25	0.8	1	0.55	1.8	0	0.14	0.0	0	0.02	0.0	2	2.16	0.9
Multiple myeloma	6	3.19	1.9	2	1.68	1.2	1	0.60	1.7	1	0.10	10.1	12	6.04	2.0 <sup>b</sup>
Leukemias	15	6.51	2.3 <sup>b</sup>	7	3.42	2.0	2	1.22	1.6	0	0.21	0.0	24	12.35	1.9 <sup>b</sup>
Chronic lymphocytic	2	1.86	1.1	0	1.04	0.0	1	0.38	2.6	0	0.07	0.0	3	3.63	0.8
Acute nonlymphocytic	8	2.19	3.7 <sup>b</sup>	1	1.15	0.9	1	0.43	2.4	0	0.08	0.0	10	4.16	2.4 <sup>b</sup>

<sup>a</sup> ICD-O codes = 179, 182.

<sup>b</sup>  $P < .05$ .

**CORPUS  
FEMALES  
LONG-TERM SURVIVORS  
NO RADIOTHERAPY**

TABLE 2H.—Observed (O) and expected (E) numbers of second primary cancers by years after diagnosis of an initial cancer of the corpus uteri or uterus, NOS among females not given radiotherapy, long-term survivors in Connecticut, 1935–82<sup>a</sup>

No. starting interval Person-yr in interval	Yr after first primary cancer diagnosis														
	1–9 yr			10–19 yr			20–29 yr			30+ yr			Total (<1–30+ yr)		
	4,158 25,247			1,849 12,030			698 4,004			187 786			4,773 45,732		
Second primary cancer site	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E
<b>All second cancers</b>	<b>222</b>	<b>201.53</b>	<b>1.1</b>	<b>135</b>	<b>121.37</b>	<b>1.1</b>	<b>59</b>	<b>51.94</b>	<b>1.1</b>	<b>17</b>	<b>12.09</b>	<b>1.4</b>	<b>453</b>	<b>413.50</b>	<b>1.1</b>
<b>All excluding site of initial cancer</b>	<b>222</b>	<b>184.15</b>	<b>1.2<sup>b</sup></b>	<b>135</b>	<b>111.79</b>	<b>1.2<sup>b</sup></b>	<b>59</b>	<b>48.55</b>	<b>1.2</b>	<b>17</b>	<b>11.43</b>	<b>1.5</b>	<b>453</b>	<b>380.19</b>	<b>1.2<sup>b</sup></b>
<b>Buccal cavity, pharynx</b>	<b>2</b>	<b>3.67</b>	<b>0.5</b>	<b>3</b>	<b>2.16</b>	<b>1.4</b>	<b>2</b>	<b>0.85</b>	<b>2.3</b>	<b>2</b>	<b>0.19</b>	<b>10.4<sup>b</sup></b>	<b>11</b>	<b>7.35</b>	<b>1.5</b>
Lip	0	0.20	0.0	0	0.12	0.0	0	0.05	0.0	0	0.02	0.0	1	0.42	2.4
Tongue	0	0.76	0.0	0	0.45	0.0	0	0.17	0.0	1	0.04	26.5	1	1.52	0.7
Salivary gland	1	0.44	2.3	1	0.26	3.8	0	0.11	0.0	0	0.02	0.0	2	0.90	2.2
Gum, other mouth	1	1.24	0.8	2	0.76	2.6	1	0.32	3.1	0	0.07	0.0	4	2.55	1.6
Pharynx	0	0.88	0.0	0	0.49	0.0	1	0.17	6.0	1	0.03	28.7	3	1.69	1.8
<b>Digestive system</b>	<b>79</b>	<b>57.20</b>	<b>1.4<sup>b</sup></b>	<b>44</b>	<b>37.69</b>	<b>1.2</b>	<b>23</b>	<b>17.64</b>	<b>1.3</b>	<b>5</b>	<b>4.32</b>	<b>1.2</b>	<b>153</b>	<b>124.29</b>	<b>1.2<sup>b</sup></b>
Esophagus	0	1.33	0.0	0	0.83	0.0	0	0.37	0.0	0	0.09	0.0	1	2.79	0.4
Stomach	8	7.13	1.1	2	4.45	0.4	2	1.94	1.0	0	0.45	0.0	13	14.95	0.9
Colon	43	26.64	1.6 <sup>b</sup>	24	18.06	1.3	16	8.77	1.8 <sup>b</sup>	2	2.20	0.9	85	59.08	1.4 <sup>b</sup>
Rectum	15	11.47	1.3	12	7.27	1.7	2	3.24	0.6	2	0.77	2.6	31	24.23	1.3
Liver, biliary	3	3.77	0.8	1	2.49	0.4	1	1.13	0.9	0	0.27	0.0	5	8.15	0.6
Pancreas	8	5.69	1.4	4	3.89	1.0	2	1.90	1.1	1	0.47	2.1	15	12.68	1.2
<b>Respiratory system</b>	<b>14</b>	<b>12.84</b>	<b>1.1</b>	<b>13</b>	<b>7.81</b>	<b>1.7</b>	<b>3</b>	<b>3.42</b>	<b>0.9</b>	<b>1</b>	<b>0.80</b>	<b>1.2</b>	<b>31</b>	<b>26.46</b>	<b>1.2</b>
Nasal cavities, sinuses	0	0.35	0.0	0	0.20	0.0	0	0.08	0.0	0	0.02	0.0	0	0.69	0.0
Larynx	1	0.79	1.3	0	0.45	0.0	0	0.17	0.0	0	0.04	0.0	1	1.55	0.6
Trachea, bronchus, lung	13	11.54	1.1	13	7.07	1.8	3	3.13	1.0	1	0.74	1.3	30	23.91	1.3
Female breast	76	54.38	1.4 <sup>b</sup>	42	30.74	1.4	18	12.36	1.5	2	2.76	0.7	145	107.54	1.3 <sup>b</sup>
<b>Female genital tract</b>	<b>10</b>	<b>36.42</b>	<b>0.3<sup>b</sup></b>	<b>3</b>	<b>19.39</b>	<b>0.2<sup>b</sup></b>	<b>2</b>	<b>6.84</b>	<b>0.3</b>	<b>1</b>	<b>1.36</b>	<b>0.7</b>	<b>20</b>	<b>68.97</b>	<b>0.3<sup>b</sup></b>
Cervix uteri	3	7.49	0.4	0	3.34	0.0	1	0.97	1.0	0	0.17	0.0	4	13.07	0.3 <sup>b</sup>
Corpus uteri	0	14.97	0.0 <sup>b</sup>	0	8.54	0.0 <sup>b</sup>	0	3.11	0.0	0	0.61	0.0	0	29.15	0.0 <sup>b</sup>
Uterus, NOS	0	2.41	0.0	0	1.04	0.0	0	0.28	0.0	0	0.05	0.0	0	4.16	0.0 <sup>b</sup>
Ovary, fallopian tubes	5	9.83	0.5	0	5.35	0.0 <sup>b</sup>	0	1.96	0.0	1	0.40	2.5	9	18.86	0.5 <sup>b</sup>
Kidney, renal pelvis, ureter	7	3.14	2.2	4	2.00	2.0	3	0.88	3.4	1	0.19	5.2	15	6.60	2.3 <sup>b</sup>
Bladder, other urinary	5	5.01	1.0	10	3.46	2.9 <sup>b</sup>	3	1.73	1.7	4	0.45	8.9 <sup>b</sup>	23	11.30	2.0 <sup>b</sup>
Melanoma of the skin	3	2.40	1.3	1	1.31	0.8	0	0.53	0.0	0	0.12	0.0	5	4.67	1.1
Eye	0	0.35	0.0	1	0.21	4.7	1	0.08	11.8	0	0.02	0.0	2	0.71	2.8
Brain, central nervous system	3	2.29	1.3	2	1.29	1.6	0	0.46	0.0	0	0.09	0.0	5	4.42	1.1
Thyroid gland	2	1.48	1.3	2	0.79	2.5	0	0.30	0.0	0	0.06	0.0	5	2.84	1.8
Bone	0	0.30	0.0	0	0.16	0.0	0	0.06	0.0	0	0.01	0.0	0	0.57	0.0
Connective tissue	1	0.86	1.2	1	0.48	2.1	1	0.20	4.9	0	0.05	0.0	3	1.71	1.8
<b>Lymphatic, hematopoietic system</b>	<b>15</b>	<b>12.49</b>	<b>1.2</b>	<b>6</b>	<b>8.17</b>	<b>0.7</b>	<b>2</b>	<b>3.87</b>	<b>0.5</b>	<b>1</b>	<b>0.97</b>	<b>1.0</b>	<b>25</b>	<b>27.09</b>	<b>0.9</b>
Non-Hodgkin's lymphoma	6	4.85	1.2	1	3.07	0.3	0	1.40	0.0	1	0.35	2.8	8	10.28	0.8
Hodgkin's disease	0	0.97	0.0	1	0.56	1.8	0	0.21	0.0	0	0.04	0.0	1	1.91	0.5
Multiple myeloma	2	2.14	0.9	2	1.51	1.3	0	0.77	0.0	0	0.19	0.0	5	4.88	1.0
Leukemias	7	4.49	1.6	2	3.02	0.7	2	1.49	1.3	0	0.38	0.0	11	9.97	1.1
Chronic lymphocytic	5	1.23	4.1 <sup>b</sup>	1	0.90	1.1	2	0.48	4.2	0	0.12	0.0	8	2.88	2.8 <sup>b</sup>
Acute nonlymphocytic	0	1.51	0.0	1	1.02	1.0	0	0.52	0.0	0	0.14	0.0	1	3.38	0.3

<sup>a</sup> ICD-O codes = 179, 182.

<sup>b</sup>  $P < .05$ .

# **OVARY FEMALES**

TABLE 3A.—*Characteristics of persons reported to the Connecticut Tumor Registry with an initial cancer of the ovary or fallopian tubes, 1935-82<sup>a</sup>*

Category	Male	Female	Total
No. with first primary cancer <sup>b</sup>	0	6,810	6,810
No. who developed a second primary cancer	0	366	366
Average age at diagnosis of first cancer, yr	0	56	56
Average yr of diagnosis of first cancer	0	1963	1963
Person-yr of follow-up	0	31,200	31,200
Average follow-up, yr	0.0	4.6	4.6
Percent given radiotherapy for first cancer	0.0	40.6	40.6

<sup>a</sup> ICD-O code = 183.

<sup>b</sup> Number excludes all persons who survived less than 2 mo after the diagnosis of their first primary cancer or who developed a simultaneous cancer during this period. First primary cancers diagnosed only at autopsy or by death certificate are also excluded as are in situ cancers.

TABLE 3B.—*Microscopic confirmation among persons who developed second primary cancers after an initial cancer of the ovary or fallopian tubes in Connecticut, 1935-82*

Microscopically confirmed	No.	Percent <sup>a</sup>
Both first and second cancers	337	92.1
Only the first cancer	23	6.3
Only the second cancer	4	1.1
Neither first nor second cancer	2	0.6
Total second primary cancers	366	100.0

<sup>a</sup> Minor discrepancies between table entries and row and column sums in this and subsequent tables are due to rounding.

**OVARY  
FEMALES**

 TABLE 3C.—Observed (O) and expected (E) numbers of second primary cancers by years after diagnosis of an initial cancer of the ovary or fallopian tubes among females in Connecticut, 1935–82<sup>a</sup>

No. starting interval Person-yr in interval	Yr after first primary cancer diagnosis														
	<1 yr			1-4 yr			5-9 yr			10+ yr			Total		
	6,810 4,339			4,193 10,036			1,776 6,892			1,080 9,933			6,810 31,200		
Second primary cancer site	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E
All second cancers	54	28.79	1.9 <sup>b</sup>	109	64.82	1.7 <sup>b</sup>	76	48.30	1.6 <sup>b</sup>	127	89.79	1.4 <sup>b</sup>	366	231.58	1.6 <sup>b</sup>
All excluding site of initial cancer	54	27.34	2.0 <sup>b</sup>	103	61.56	1.7 <sup>b</sup>	70	45.94	1.5 <sup>b</sup>	121	85.81	1.4 <sup>b</sup>	348	220.54	1.6 <sup>b</sup>
Buccal cavity, pharynx	1	0.52	1.9	1	1.17	0.9	2	0.89	2.3	1	1.65	0.6	5	4.22	1.2
Lip	0	0.03	0.0	0	0.06	0.0	0	0.05	0.0	0	0.09	0.0	0	0.22	0.0
Tongue	1	0.11	9.5	0	0.24	0.0	1	0.18	5.5	0	0.34	0.0	2	0.87	2.3
Salivary gland	0	0.07	0.0	0	0.15	0.0	0	0.11	0.0	0	0.19	0.0	0	0.52	0.0
Gum, other mouth	0	0.17	0.0	1	0.40	2.5	1	0.30	3.3	1	0.58	1.7	3	1.45	2.1
Pharynx	0	0.12	0.0	0	0.28	0.0	0	0.21	0.0	0	0.38	0.0	0	1.00	0.0
Digestive system	22	7.91	2.8 <sup>b</sup>	25	17.55	1.4	19	13.29	1.4	45	26.35	1.7 <sup>b</sup>	111	65.06	1.7 <sup>b</sup>
Esophagus	0	0.19	0.0	0	0.42	0.0	1	0.32	3.2	0	0.62	0.0	1	1.54	0.6
Stomach	1	1.03	1.0	5	2.21	2.3	3	1.60	1.9	0	2.92	0.0	9	7.75	1.2
Colon	17	3.65	4.7 <sup>b</sup>	12	8.15	1.5	10	6.25	1.6	24	12.76	1.9 <sup>b</sup>	63	30.80	2.0 <sup>b</sup>
Rectum	3	1.58	1.9	2	3.52	0.6	4	2.66	1.5	12	5.13	2.3 <sup>b</sup>	21	12.89	1.6 <sup>b</sup>
Liver, biliary	0	0.52	0.0	2	1.14	1.8	0	0.85	0.0	4	1.66	2.4	6	4.17	1.4
Pancreas	0	0.78	0.0	3	1.74	1.7	1	1.34	0.7	4	2.75	1.5	8	6.60	1.2
Respiratory system	4	1.78	2.2	2	4.06	0.5	5	3.10	1.6	11	6.36	1.7	22	15.30	1.4
Nasal cavities, sinuses	0	0.05	0.0	0	0.11	0.0	0	0.08	0.0	0	0.14	0.0	0	0.39	0.0
Larynx	0	0.11	0.0	0	0.26	0.0	0	0.20	0.0	0	0.37	0.0	0	0.94	0.0
Trachea, bronchus, lung	4	1.59	2.5	2	3.64	0.5	5	2.79	1.8	11	5.78	1.9	22	13.79	1.6
Female breast	12	8.01	1.5	34	18.22	1.9 <sup>b</sup>	16	13.41	1.2	25	23.72	1.1	87	63.33	1.4 <sup>b</sup>
Female genital tract	6	5.35	1.1	20	11.97	1.7 <sup>b</sup>	19	8.65	2.2 <sup>b</sup>	16	14.32	1.1	61	40.27	1.5 <sup>b</sup>
Cervix uteri	0	1.21	0.0	5	2.68	1.9	4	1.82	2.2	0	2.49	0.0	9	8.20	1.1
Corpus uteri	6	2.06	2.9 <sup>b</sup>	5	4.70	1.1	7	3.55	2.0	8	6.40	1.3	26	16.69	1.6 <sup>b</sup>
Uterus, NOS	0	0.38	0.0	4	0.78	5.1 <sup>b</sup>	0	0.51	0.0	0	0.65	0.0	4	2.32	1.7
Ovary, fallopian tubes	0	1.45	0.0	6	3.26	1.8	6	2.36	2.5	6	3.98	1.5	18	11.04	1.6
Kidney, renal pelvis, ureter	2	0.43	4.6	4	0.97	4.1 <sup>b</sup>	1	0.74	1.3	3	1.43	2.1	10	3.58	2.8 <sup>b</sup>
Bladder, other urinary	1	0.69	1.4	5	1.56	3.2 <sup>b</sup>	1	1.20	0.8	10	2.53	4.0 <sup>b</sup>	17	5.97	2.8 <sup>b</sup>
Melanoma of the skin	2	0.37	5.4	1	0.87	1.1	1	0.64	1.6	1	1.11	0.9	5	2.99	1.7
Eye	0	0.05	0.0	0	0.11	0.0	0	0.08	0.0	0	0.15	0.0	0	0.39	0.0
Brain, central nervous system	1	0.33	3.0	1	0.76	1.3	0	0.56	0.0	1	0.97	1.0	3	2.62	1.1
Thyroid gland	0	0.24	0.0	0	0.55	0.0	1	0.40	2.5	2	0.64	3.1	3	1.82	1.6
Bone	0	0.05	0.0	0	0.10	0.0	0	0.07	0.0	0	0.11	0.0	0	0.33	0.0
Connective tissue	1	0.13	7.8	0	0.29	0.0	1	0.21	4.7	3	0.36	8.3 <sup>b</sup>	5	0.99	5.0 <sup>b</sup>
Lymphatic, hematopoietic system	0	1.73	0.0	13	3.94	3.3 <sup>b</sup>	8	3.01	2.7 <sup>b</sup>	4	6.01	0.7	25	14.68	1.7 <sup>b</sup>
Non-Hodgkin's lymphoma	0	0.67	0.0	1	1.52	0.7	2	1.16	1.7	1	2.32	0.4	4	5.67	0.7
Hodgkin's disease	0	0.15	0.0	1	0.35	2.8	0	0.25	0.0	0	0.41	0.0	1	1.16	0.9
Multiple myeloma	0	0.28	0.0	3	0.64	4.7	2	0.51	3.9	1	1.11	0.9	6	2.54	2.4
Leukemias	0	0.62	0.0	8	1.41	5.7 <sup>b</sup>	4	1.08	3.7	2	2.17	0.9	14	5.28	2.7 <sup>b</sup>
Chronic lymphocytic	0	0.16	0.0	0	0.37	0.0	0	0.29	0.0	2	0.64	3.1	2	1.47	1.4
Acute nonlymphocytic	0	0.21	0.0	6	0.49	12.3 <sup>b</sup>	4	0.38	10.6 <sup>b</sup>	0	0.77	0.0	10	1.84	5.4 <sup>b</sup>

<sup>a</sup> ICD-O code = 183.<sup>b</sup>  $P < .05$ .

**OVARY  
FEMALES  
RADIOTHERAPY**

TABLE 3D.—Observed (O) and expected (E) numbers of second primary cancers by years after diagnosis of an initial cancer of the ovary or fallopian tubes among females given radiotherapy in Connecticut, 1935-82<sup>a</sup>

No. starting interval Person-yr in interval	Yr after first primary cancer diagnosis														
	<1 yr			1-4 yr			5-9 yr			10+ yr			Total		
	2,767 1,822			1,758 4,117			741 2,811			422 3,457			2,767 12,208		
Second primary cancer site	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E
<b>All second cancers</b>	<b>18</b>	<b>10.76</b>	<b>1.7</b>	<b>48</b>	<b>24.99</b>	<b>1.9<sup>b</sup></b>	<b>48</b>	<b>19.24</b>	<b>2.5<sup>b</sup></b>	<b>59</b>	<b>30.82</b>	<b>1.9<sup>b</sup></b>	<b>173</b>	<b>85.76</b>	<b>2.0<sup>b</sup></b>
<b>All excluding site of initial cancer</b>	<b>18</b>	<b>10.17</b>	<b>1.8<sup>b</sup></b>	<b>46</b>	<b>23.67</b>	<b>1.9<sup>b</sup></b>	<b>45</b>	<b>18.27</b>	<b>2.5<sup>b</sup></b>	<b>56</b>	<b>29.42</b>	<b>1.9<sup>b</sup></b>	<b>165</b>	<b>81.48</b>	<b>2.0<sup>b</sup></b>
<b>Buccal cavity, pharynx</b>	<b>0</b>	<b>0.19</b>	<b>0.0</b>	<b>1</b>	<b>0.47</b>	<b>2.1</b>	<b>0</b>	<b>0.38</b>	<b>0.0</b>	<b>1</b>	<b>0.59</b>	<b>1.7</b>	<b>2</b>	<b>1.63</b>	<b>1.2</b>
Lip	0	0.01	0.0	0	0.02	0.0	0	0.02	0.0	0	0.03	0.0	0	0.07	0.0
Tongue	0	0.04	0.0	0	0.10	0.0	0	0.08	0.0	0	0.12	0.0	0	0.34	0.0
Salivary gland	0	0.03	0.0	0	0.06	0.0	0	0.04	0.0	0	0.06	0.0	0	0.19	0.0
Gum, other mouth	0	0.06	0.0	1	0.16	6.4	0	0.13	0.0	1	0.21	4.8	2	0.56	3.6
Pharynx	0	0.05	0.0	0	0.12	0.0	0	0.09	0.0	0	0.14	0.0	0	0.40	0.0
<b>Digestive system</b>	<b>9</b>	<b>2.78</b>	<b>3.2<sup>b</sup></b>	<b>11</b>	<b>6.27</b>	<b>1.8</b>	<b>12</b>	<b>4.84</b>	<b>2.5<sup>b</sup></b>	<b>21</b>	<b>8.57</b>	<b>2.5<sup>b</sup></b>	<b>53</b>	<b>22.45</b>	<b>2.4<sup>b</sup></b>
Esophagus	0	0.07	0.0	0	0.16	0.0	0	0.13	0.0	0	0.22	0.0	0	0.56	0.0
Stomach	0	0.37	0.0	1	0.75	1.3	3	0.53	5.7 <sup>b</sup>	0	0.89	0.0	4	2.52	1.6
Colon	7	1.27	5.5 <sup>b</sup>	5	2.91	1.7	6	2.29	2.6	11	4.16	2.6 <sup>b</sup>	29	10.62	2.7 <sup>b</sup>
Rectum	1	0.57	1.8	1	1.30	0.8	2	1.00	2.0	6	1.72	3.5 <sup>b</sup>	10	4.59	2.2 <sup>b</sup>
Liver, biliary	0	0.18	0.0	1	0.39	2.6	0	0.29	0.0	2	0.52	3.9	3	1.38	2.2
Pancreas	0	0.27	0.0	2	0.63	3.2	1	0.50	2.0	1	0.91	1.1	4	2.31	1.7
<b>Respiratory system</b>	<b>0</b>	<b>0.60</b>	<b>0.0</b>	<b>1</b>	<b>1.60</b>	<b>0.6</b>	<b>3</b>	<b>1.41</b>	<b>2.1</b>	<b>5</b>	<b>2.42</b>	<b>2.1</b>	<b>9</b>	<b>6.03</b>	<b>1.5</b>
Nasal cavities, sinuses	0	0.02	0.0	0	0.04	0.0	0	0.03	0.0	0	0.05	0.0	0	0.15	0.0
Larynx	0	0.04	0.0	0	0.11	0.0	0	0.09	0.0	0	0.14	0.0	0	0.38	0.0
Trachea, bronchus, lung	0	0.53	0.0	1	1.43	0.7	3	1.27	2.4	5	2.20	2.3	9	5.43	1.7
Female breast	6	3.13	1.9	16	7.36	2.2 <sup>b</sup>	10	5.57	1.8	13	8.32	1.6	45	24.37	1.8 <sup>b</sup>
<b>Female genital tract</b>	<b>1</b>	<b>2.16</b>	<b>0.5</b>	<b>9</b>	<b>4.83</b>	<b>1.9</b>	<b>12</b>	<b>3.55</b>	<b>3.4<sup>b</sup></b>	<b>7</b>	<b>5.06</b>	<b>1.4</b>	<b>29</b>	<b>15.60</b>	<b>1.9<sup>b</sup></b>
Cervix uteri	0	0.53	0.0	1	1.09	0.9	2	0.71	2.8	0	0.86	0.0	3	3.19	0.9
Corpus uteri	1	0.81	1.2	3	1.94	1.5	6	1.54	3.9 <sup>b</sup>	4	2.35	1.7	14	6.64	2.1 <sup>b</sup>
Uterus, NOS	0	0.15	0.0	3	0.28	10.8 <sup>b</sup>	0	0.17	0.0	0	0.19	0.0	3	0.79	3.8
Ovary, fallopian tubes	0	0.59	0.0	2	1.32	1.5	3	0.97	3.1	3	1.40	2.1	8	4.28	1.9
Kidney, renal pelvis, ureter	0	0.16	0.0	2	0.37	5.4	0	0.30	0.0	1	0.50	2.0	3	1.32	2.3
Bladder, other urinary	0	0.23	0.0	1	0.56	1.8	1	0.46	2.2	6	0.83	7.2 <sup>b</sup>	8	2.08	3.9 <sup>b</sup>
Melanoma of the skin	0	0.14	0.0	1	0.36	2.8	1	0.28	3.6	0	0.40	0.0	2	1.17	1.7
Eye	0	0.02	0.0	0	0.04	0.0	0	0.03	0.0	0	0.05	0.0	0	0.15	0.0
Brain, central nervous system	1	0.13	7.6	0	0.31	0.0	0	0.24	0.0	1	0.36	2.8	2	1.04	1.9
Thyroid gland	0	0.10	0.0	0	0.22	0.0	1	0.16	6.2	1	0.21	4.7	2	0.70	2.9
Bone	0	0.02	0.0	0	0.04	0.0	0	0.03	0.0	0	0.04	0.0	0	0.12	0.0
Connective tissue	0	0.05	0.0	0	0.11	0.0	0	0.08	0.0	3	0.12	24.6 <sup>b</sup>	3	0.37	8.2 <sup>b</sup>
<b>Lymphatic, hematopoietic system</b>	<b>0</b>	<b>0.62</b>	<b>0.0</b>	<b>4</b>	<b>1.48</b>	<b>2.7</b>	<b>7</b>	<b>1.17</b>	<b>6.0<sup>b</sup></b>	<b>0</b>	<b>2.02</b>	<b>0.0</b>	<b>11</b>	<b>5.28</b>	<b>2.1<sup>b</sup></b>
Non-Hodgkin's lymphoma	0	0.24	0.0	0	0.58	0.0	1	0.47	2.1	0	0.81	0.0	1	2.09	0.5
Hodgkin's disease	0	0.06	0.0	1	0.14	7.1	0	0.10	0.0	0	0.14	0.0	1	0.44	2.3
Multiple myeloma	0	0.10	0.0	0	0.24	0.0	2	0.20	9.9 <sup>b</sup>	0	0.38	0.0	2	0.92	2.2
Leukemias	0	0.22	0.0	3	0.51	5.8 <sup>b</sup>	4	0.39	10.2 <sup>b</sup>	0	0.70	0.0	7	1.82	3.8 <sup>b</sup>
Chronic lymphocytic	0	0.06	0.0	0	0.13	0.0	0	0.11	0.0	0	0.21	0.0	0	0.50	0.0
Acute nonlymphocytic	0	0.07	0.0	1	0.18	5.5	4	0.14	27.7 <sup>b</sup>	0	0.26	0.0	5	0.65	7.6 <sup>b</sup>

<sup>a</sup> ICD-O code = 183.

<sup>b</sup>  $P < .05$ .

**OVARY**  
**FEMALES**  
**NO RADIOTHERAPY**

TABLE 3E.—*Observed (O) and expected (E) numbers of second primary cancers by years after diagnosis of an initial cancer of the ovary or fallopian tubes among females not given radiotherapy in Connecticut, 1935–82<sup>a</sup>*

No. starting interval Person-yr in interval	Yr after first primary cancer diagnosis														
	<1 yr			1-4 yr			5-9 yr			10+ yr			Total		
	4,043 2,517			2,435 5,919			1,035 4,081			658 6,476			4,043 18,993		
Second primary cancer site	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E
All second cancers	36	18.03	2.0 <sup>b</sup>	61	39.83	1.5 <sup>b</sup>	28	29.07	1.0	68	58.98	1.2	193	145.83	1.3 <sup>b</sup>
All excluding site of initial cancer	36	17.16	2.1 <sup>b</sup>	57	37.89	1.5 <sup>b</sup>	25	27.68	0.9	65	56.40	1.2	183	139.06	1.3 <sup>b</sup>
Buccal cavity, pharynx	1	0.32	3.1	0	0.70	0.0	2	0.51	3.9	0	1.06	0.0	3	2.60	1.2
Lip	0	0.02	0.0	0	0.04	0.0	0	0.03	0.0	0	0.06	0.0	0	0.15	0.0
Tongue	1	0.07	15.2	0	0.14	0.0	1	0.10	9.6	0	0.22	0.0	2	0.53	3.8
Salivary gland	0	0.04	0.0	0	0.09	0.0	0	0.07	0.0	0	0.13	0.0	0	0.33	0.0
Gum, other mouth	0	0.11	0.0	0	0.24	0.0	1	0.17	5.8	0	0.37	0.0	1	0.90	1.1
Pharynx	0	0.08	0.0	0	0.16	0.0	0	0.12	0.0	0	0.24	0.0	0	0.59	0.0
Digestive system	13	5.12	2.5 <sup>b</sup>	14	11.28	1.2	7	8.45	0.8	24	17.78	1.3	58	42.61	1.4 <sup>b</sup>
Esophagus	0	0.12	0.0	0	0.26	0.0	1	0.19	5.3	0	0.41	0.0	1	0.98	1.0
Stomach	1	0.66	1.5	4	1.46	2.7	0	1.08	0.0	0	2.03	0.0	5	5.23	1.0
Colon	10	2.38	4.2 <sup>b</sup>	7	5.24	1.3	4	3.96	1.0	13	8.61	1.5	34	20.18	1.7 <sup>b</sup>
Rectum	2	1.01	2.0	1	2.22	0.4	2	1.65	1.2	6	3.42	1.8	11	8.30	1.3
Liver, biliary	0	0.34	0.0	1	0.75	1.3	0	0.56	0.0	2	1.15	1.7	3	2.79	1.1
Pancreas	0	0.51	0.0	1	1.11	0.9	0	0.83	0.0	3	1.84	1.6	4	4.30	0.9
Respiratory system	4	1.18	3.4	1	2.46	0.4	2	1.69	1.2	6	3.94	1.5	13	9.27	1.4
Nasal cavities, sinuses	0	0.03	0.0	0	0.07	0.0	0	0.05	0.0	0	0.09	0.0	0	0.24	0.0
Larynx	0	0.07	0.0	0	0.15	0.0	0	0.11	0.0	0	0.23	0.0	0	0.56	0.0
Trachea, bronchus, lung	4	1.07	3.8 <sup>b</sup>	1	2.21	0.5	2	1.51	1.3	6	3.58	1.7	13	8.36	1.6
Female breast	6	4.88	1.2	18	10.86	1.7	6	7.84	0.8	12	15.40	0.8	42	38.96	1.1
Female genital tract	5	3.19	1.6	11	7.14	1.5	7	5.10	1.4	9	9.25	1.0	32	24.67	1.3
Cervix uteri	0	0.68	0.0	4	1.59	2.5	2	1.11	1.8	0	1.63	0.0	6	5.01	1.2
Corpus uteri	5	1.25	4.0 <sup>b</sup>	2	2.76	0.7	1	2.01	0.5	4	4.05	1.0	12	10.06	1.2
Uterus, NOS	0	0.23	0.0	1	0.50	2.0	0	0.34	0.0	0	0.46	0.0	1	1.53	0.7
Ovary, fallopian tubes	0	0.87	0.0	4	1.94	2.1	3	1.39	2.2	3	2.58	1.2	10	6.77	1.5
Kidney, renal pelvis, ureter	2	0.28	7.3	2	0.60	3.3	1	0.45	2.2	2	0.94	2.1	7	2.25	3.1 <sup>b</sup>
Bladder, other urinary	1	0.46	2.2	4	1.00	4.0 <sup>b</sup>	0	0.75	0.0	4	1.70	2.4	9	3.90	2.3 <sup>b</sup>
Melanoma of the skin	2	0.23	8.7	0	0.51	0.0	0	0.36	0.0	1	0.71	1.4	3	1.81	1.7
Eye	0	0.03	0.0	0	0.07	0.0	0	0.05	0.0	0	0.10	0.0	0	0.25	0.0
Brain, central nervous system	0	0.20	0.0	1	0.45	2.2	0	0.32	0.0	0	0.61	0.0	1	1.58	0.6
Thyroid gland	0	0.14	0.0	0	0.33	0.0	0	0.24	0.0	1	0.42	2.4	1	1.13	0.9
Bone	0	0.03	0.0	0	0.06	0.0	0	0.04	0.0	0	0.07	0.0	0	0.21	0.0
Connective tissue	1	0.08	12.8	0	0.18	0.0	1	0.13	7.7	0	0.24	0.0	2	0.63	3.2
Lymphatic, hematopoietic system	0	1.11	0.0	9	2.46	3.7 <sup>b</sup>	1	1.84	0.5	4	3.98	1.0	14	9.40	1.5
Non-Hodgkin's lymphoma	0	0.43	0.0	1	0.94	1.1	1	0.69	1.4	1	1.51	0.7	3	3.57	0.8
Hodgkin's disease	0	0.09	0.0	0	0.21	0.0	0	0.15	0.0	0	0.27	0.0	0	0.73	0.0
Multiple myeloma	0	0.18	0.0	3	0.40	7.5 <sup>b</sup>	0	0.31	0.0	1	0.73	1.4	4	1.62	2.5
Leukemias	0	0.40	0.0	5	0.90	5.5 <sup>b</sup>	0	0.69	0.0	2	1.47	1.4	7	3.46	2.0
Chronic lymphocytic	0	0.11	0.0	0	0.24	0.0	0	0.19	0.0	2	0.44	4.6	2	0.96	2.1
Acute nonlymphocytic	0	0.14	0.0	5	0.31	16.4 <sup>b</sup>	0	0.23	0.0	0	0.51	0.0	5	1.19	4.2 <sup>b</sup>

<sup>a</sup> ICD-O code = 183.

<sup>b</sup>  $P < .05$ .